

ARCHAEOLOGY



Summer 1948

\$1.50

A LETTER TO MEMBERS OF THE ARCHAEOLOGICAL INSTITUTE OF AMERICA
Dear Member,

You have now received the first two issues of the magazine *ARCHAEOLOGY*. You have also been receiving, unless you are an Associate Member, the *AMERICAN JOURNAL OF ARCHAEOLOGY*.

It would please us all if we could in some way manage to go on sending both of these quarterlies to you, in return for dues (\$10) which have not been altered in amount since the Institute was founded. At present, as you can perhaps imagine, this is not feasible.

Not later we hope than the first of June (earlier — even now — if you can), we need your decision:—

Your Council has voted that Sustaining Members (\$15) may continue to receive both the *AMERICAN JOURNAL OF ARCHAEOLOGY* and the magazine *ARCHAEOLOGY*.

Your Council has also voted that Life Members, Annual Members, and Student Members may make a choice between the two publications.

To assist you in your decision, here are two notes about the future:

The *JOURNAL* has announced for its next number a symposium on Homer. This is not a new departure — there was a famous symposium on the Hermes of Praxiteles in 1931 — but the present collection of essays will have a range unequalled by any set of studies on the Homeric age hitherto published in this country. In this new number also, the extensive surveys of archaeology in various areas of the world will have their real beginning. From now on, our *JOURNAL* will have more archaeology packaged in its pages than any other current publication.

The magazine *ARCHAEOLOGY* will certainly develop and change, but only in detail. The editorial policy is settled that pictures need stories and stories need pictures. Classical art and archaeology will be found in its pages along with Maya. The excitement of excavation in the field will balance the less expected pleasures of "discoveries" in our collections here at home. The Editors report with pleasure that the mature scholarship of our day is steadily producing more good things than they can print.

A card is enclosed for your reply. Later you may change if you care to do so. All Members will continue to receive *Newsletters* and the *Bulletin*.

Very sincerely yours,

STERLING DOW,
President.

THE COVER ILLUSTRATION SHOWS a Mycenaean warrior in high relief, one of an extensive deposit of carved ivories found in 1946, close to the foundations of the temple of Artemis on Delos, by MM. J. TREHEUX and H. GALLET DE SANTERRE, of the French School at Athens, and informally reported in ARCHAEOLOGICAL NEWSLETTER No. 6, pages 42-43. The figure is standing, helmeted, and leaning on his lance, against the decorative background provided by his large figure-8 shield. The plaque, about 5 inches high by 2½ inches wide, was probably part of the decoration of a wooden chest. Reproduced by permission of MM. DEMANGEL, Director of the French School, and GALLET DE SANTERRE.

ARCHAEOLOGY

A MAGAZINE DEALING WITH THE ANTIQUITY OF THE WORLD
PUBLISHED QUARTERLY BY THE ARCHAEOLOGICAL INSTITUTE OF AMERICA

VOLUME 1, NUMBER 2 (2)

JUNE, 1948

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ARCHAEOLOGY is published in March, June, September and December by the ARCHAEOLOGICAL INSTITUTE OF AMERICA, Andover Hall, Cambridge 38, Massachusetts.

Subscription, \$6.00 per volume in the United States. Foreign postage, \$0.50 additional. Single numbers \$1.50.

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Printed by the T. O. Metcalf Company, Boston, Massachusetts. Engravings by the Wright Company, Boston, Massachusetts.

Monolithic Sculpture of the Southern Andes

By Richard P. Schaedel



A native of East Orange, New Jersey, Mr. Schaedel took his A.B. from the University of Wisconsin in 1942. After three and a half years in the Army he took up his studies again at the University of Chicago and then at Yale. Awarded a traveling fellowship in anthropology in the spring of 1947, he has spent the last year in Bolivia, and Peru; ARCHAEOLOGY presents herewith the first fruits of his explorations.

"EL FRAILE," AS HE IS KNOWN BY ANDEAN ARCHAEOLOGISTS AND BOLIVIANS ALIKE, STANDS AS A LONELY SENTINEL, GUARDING THE MOST FAMOUS ARCHAEOLOGICAL SITE IN SOUTH AMERICA—TIAHUANACO. THE LARGE TEMPLE SITE IS ONLY A FEW KILOMETERS FROM THE SOUTHERN SHORES OF LAKE TITICACA IN THE BOLIVIAN ALTIPLANO; AND, LIKE COPACABANA OF THE PRESENT DAY, SERVED IN PRE-INCAIC TIMES AS A MECCA FOR PILGRIMS FROM HUNDREDS OF MILES AROUND. DESPITE THE RAVAGES OF TIME—IT IS ESTIMATED THAT EL FRAILE HAS BEEN STANDING HIS LONELY VIGIL AT LEAST 900 YEARS, AND POSSIBLY MUCH LONGER—MUCH OF THE RICH SYMBOLISM OF TIAHUANACO IS STILL PRESERVED IN HIS VESTMENTS. THE DECIPHERMENT OF THE SYMBOLS OF TIAHUANACO HAS BEEN THE INTERMURAL SPORT OF SOUTH AMERICAN ANTIQUARIANS FOR YEARS; THE MOST LIKELY CONCLUSION CONCERNING EL FRAILE IS THAT HE (OR SHE?) REPRESENTS SOME LACUSTRINE DIVINITY—WITNESS THE FISH-HEAD DESIGNS ON THE "PANTS" AND THE CRUSTACEAN-LIKE CREATURES WHICH FORM THE WAISTBAND DESIGN. IN THE LEFT HAND IS A "KERO," A CEREMONIAL DRINKING VESSEL OF WHICH ABUNDANT EXAMPLES HAVE BEEN FOUND, SOME STILL IN USE, THROUGHOUT BOLIVIA AND PERU. IT IS ANYONE'S GUESS WHAT EL FRAILE GRASPS IN HIS RIGHT HAND—SHALL WE SAY THE OVERWORKED "CEREMONIAL OBJECT"?

"EL MONOLITO BENNETT," MEASURING SOME 22 FEET AND WEIGHING 20 TONS, THE LARGEST STATUE IN SOUTH AMERICA, NAMED AFTER ITS NORTH AMERICAN DISCOVERER, DR. WENDELL J. BENNETT OF YALE. A SPECIAL SPUR OF THE LA PAZ—TIAHUANACO RAILWAY WAS CONSTRUCTED TO CONVEY THE COLOSSUS TO LA PAZ. AFTER MUCH POLITICAL CONTROVERSY, IT WAS RAISED IN ITS PRESENT COMMANDING POSITION IN THE MUSEO DEL HOMBRE AMERICANO, A SMALL OPEN-AIR MUSEUM OF THE TIAHUANACO STONEWORK COLLECTED BY THE LATE SR. ING. POSNANSKY, WHO DEVOTED A LIFETIME TO THE PRESERVATION OF THE MONUMENTS OF TIAHUANACO AND TO ELABORATE THEORIES AS TO THEIR SIGNIFICANCE. SOME HAVE MAINTAINED THAT THE STONE WAS ORIGINALLY COVERED WITH SHEETS OF GOLD HELD IN PLACE BY NAILS.



THE KALASASAYA, OR CENTRAL QUADRANGULAR TEMPLE, AT TIAHUANACO. THE ALIGNMENT OF THE LARGE MONOLITHIC BLOCKS STILL PRESERVES THE OUTLINE OF THE HUGE STRUCTURE. TO THE FAR RIGHT IS THE MUCH PHOTOGRAPHED, MOST HOTLY DISCUSSED AND HEAVILY THEORIZED BLOCK IN SOUTH AMERICA, THE SUN DOOR, SHOWN HERE AT THE RIGHT (*Photo Cordero, La Paz*)





"PUMA PUNCU." WHAT LOOKS LIKE A STONE-CUTTER'S NIGHTMARE WAS PROBABLY ANOTHER CEREMONIAL ENCLOSURE SIMILAR TO THE KALASASAYA, SEVERAL HUNDRED METERS AWAY. THE DESTRUCTION HERE WAS LARGELY WROUGHT BY THE DYNAMITE USED ON THESE BLOCKS BY THE BUILDERS OF THE LA PAZ-TIAHUANACO RAILWAY SOME FIFTY YEARS AGO. THE PROBLEM OF HOW SUCH HUGE BLOCKS WERE TRANSPORTED REMAINS SUBJECT TO THEORY; ONE OF THE MOST INGENUOUS THEORIES, ADVANCED BY POSNANSKY, WAS THAT THEY WERE CONVEYED ON MASSES OF ROUND STONES WHICH ACTED MORE OR LESS AS ROLLER BEARINGS. THE NAME PUMA PUNCU DERIVES FROM THE STATUES FOUND AT THE SITE, OF WHICH TWO EXAMPLES VISIBLE IN THE FOREGROUND ARE TYPICAL. THE SIZE OF THE PASSAGE OF SEVERAL OF THE MONOLITHIC DOORS FOUND HERE HAS LED SOME TO SUGGEST THAT, SINCE THEY WOULD NOT ADMIT A MAN STANDING ERECT, CEREMONIAL PUMAS WERE ENCLOSED IN THESE MEGALITHIC CAGES FOR SPECIAL RITES.



LEFT, A CLOSE-UP OF ONE OF THE "PUMAS" IN THE UPPER PHOTOGRAPH. IT PROBABLY REPRESENTS A FELINE DEITY WITH THE BODY OF A MAN AND THE HEAD OF A PUMA. THE ANTHROPOMORPHIZED PUMA IS A RECURRENT THEME IN ANDEAN SCULPTURE. THE NUMEROUS HEADLESS STATUES FOUND AT TIAHUANACO AND OTHER PARTS OF THE SOUTHERN ANDES PROBABLY HAD SIMILAR BESTIAL HEADS. WITH WISE ECONOMY, THE GOOD FATHERS CHARGED WITH THE RESPONSIBILITY OF EXTIRPATING IDOLATRY REFRAINED FROM DEMOLISHING THE ENTIRE MONOLITH, AND CONFINED THEMSELVES ONLY TO THE MOST NOXIOUS PARTS. ON THE RIGHT IS SHOWN A BETTER-PRESERVED SPECIMEN, HAPPILY PLACED IN THE OPEN-AIR MUSEUM IN LA PAZ. THE CEREMONIAL AXE IN THE RIGHT HAND POINTS TO A GORY RITE, WHICH MAY HAVE LED THE EXTIRPATORS TO DESTROY THE ONE DOUBTLESS ONCE HELD BY THE STATUE ON THE LEFT.

THE FAMOUS "GIGANTIC HEAD," THE ELABORATELY-CARVED BODY OF WHICH WAS EXTANT A CENTURY AGO, BUT HAS SINCE BEEN DEMOLISHED BY DYNAMITE. A COMPEER OF EL MONOLITO BENNETT AND EL FRAILE, IT REPRESENTS THE CLASSIC STYLE OF TIAHUANACO STONE-CARVING AT ITS BEST.

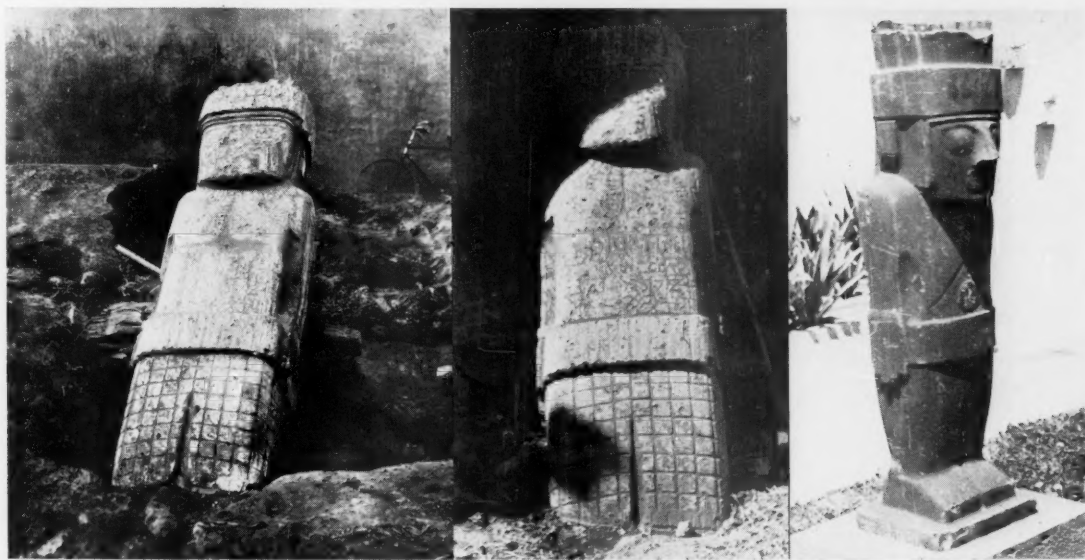


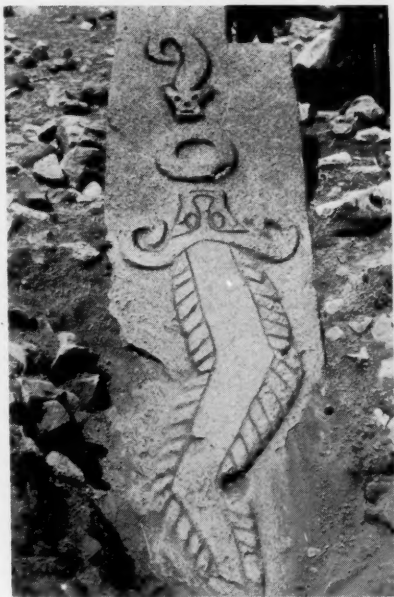
Photo Cordero, La Paz

LEFT, THE MOST RECENTLY DISCOVERED MONOLITH, SHORTLY AFTER IT WAS UNEARTHED IN FEBRUARY, 1947, IN THE BACK YARD OF ONE OF THE VILLAGERS OF TIAHUANACO. AFTER AN EARTHQUAKE HAD DESTROYED THE ADOBE WALL BEHIND THE HOUSE, THE OWNER ORDERED A HOLE DUG IN THE BACK YARD TO SECURE MATERIAL FOR THE RECONSTRUCTION. THE WORKMEN, SHORTLY AFTER COMMENCING WORK, FOUND THIS WELL-PRESERVED IDOL. CENTER, A VIEW OF THE SAME STATUE WHEN THE AUTHOR VISITED TIAHUANACO IN SEPTEMBER, 1947; THE INSCRIPTION READS "PRIMERO DE INERO AÑO 1572"; THIS WAS DOUBTLESS THE DATE WHEN THE STATUE WAS INTERRED BY THE ZEALOUS VILLAGERS OF THE NEWLY-HISPANICIZED PUEBLO. SINCE EXCAVATION WITHIN THE PUEBLO OF TIAHUANACO IS FORBIDDEN, IT WOULD REQUIRE AN EARTHQUAKE TO UNCOVER THE MYSTERIES THAT LIE BURIED THERE. RIGHT, STANDING AT RIGID ATTENTION IN THE OPEN-AIR MUSEUM IN LA PAZ IS THIS WELL-EXECUTED STATUE OF BLACK VOLCANIC STONE. IT PROBABLY REPRESENTS AN EARLIER EPOCH IN THE LONG LIFE OF THIS SHRINE.



SOME 200 MILES NORTH OF TIAHUANACO AND SOME 60 MILES NORTH OF LAKE TITICACA IN PERU IS PUKARA, ANOTHER CENTER OF MONOLITHIC SCULPTURE AND CONSTRUCTIONS OF DRESSED STONE. THE ACCOMPANYING PHOTOGRAPH REPRESENTS THE FINEST EXAMPLE OF PUKARA SCULPTURE. THE ATTRIBUTES OF THE DEITY ARE NOT CLEARLY DISTINCT FROM THE ANTHROPOMORPHIZED PUMAS OF TIAHUANACO. THERE IS NO DOUBT HERE ABOUT THE SINISTER PURPOSE FOR WHICH THE SACRIFICIAL KNIFE, GRASPED IN THE RIGHT HAND, IS INTENDED. FOR A RATHER STRIKING SIMILARITY BETWEEN THESE TWO SITES, COMPARE THE UNIQUE AND INDEED IMPOSSIBLE POSITION OF THE FINGERS OF THE RIGHT HAND OF THIS FIGURE WITH EL FRAILLE'S.

Photo Guillen, Lima

*Photos Guillen, Lima*

TWO STELAE FROM PUKARA WHICH PROBABLY REPRESENT DIFFERENT PERIODS IN THE STONE-CARVING AT THE SITE. THE STELA ON THE LEFT REPRESENTS THE NATIVE "SUCHE," FISH OF THE ALTIPLANO, ALWAYS ACCOMPANIED BY THE RING OF UNKNOWN SIGNIFICANCE. THE NICHE WAS DOUBTLESS FOR THE SUPPORT OF A CROSSBEAM. THE BEAUTIFULLY-WORKED STELA ON THE RIGHT, WHILE PRESERVING A CERTAIN SEMBLANCE OF A SIMILAR SYMBOLIC REPRESENTATION, HAS ACHIEVED A SOPHISTICATED NOTE IN THE INGENIOUS BLEND OF ZIGZAG AND CURVE THAT BORDERS ON ABSTRACTION.

*Photo Guillen, Lima*

A SOMEWHAT CRUDER EXAMPLE FROM PUKARA, BUT MORE CLEARLY IN THE TRADITION OF SCULPTURE IN THE ROUND, WHICH SEEMS TO HAVE SUFFERED IN PERU THE SAME FATE AS IN THE MAYA AREA, OF NEVER BEING FREED FROM THE BLOCK. THE HEADLESS CONDITION OF THE STATUE AND THE EXPOSED RIBS AND NAVEL LEND CORROBORATION TO THE SINISTER IMPLICATIONS OF PUKARA RITUAL DRAWN FROM THE PLATE ON THE OPPOSITE PAGE.



ALTHOUGH THE STONEWORK OF PUKARA IS ON THE WHOLE LESS SUCCESSFUL THAN THAT OF TIAHUANACO, ITS CERAMICS WERE SECOND TO NONE, AND TO THIS DAY PUKARA ENJOYS THE REPUTATION FOR THE FINEST CERAMICS IN PERU. THE ABOVE SELECTION IN HANDSOME POLYCHROME IS TYPICAL OF THE SITE, INCLUDING THE INVARIABLY FRAGMENTARY CONDITION OF THE PIECES. PUKARA PROBABLY HAD ITS FLORUIT C. 600-1000 A.D.



AN EXAMPLE OF THE FINE DRESSED STONEMWORK EMPLOYED IN THE CONSTRUCTION OF SUBTERRANEAN GALLERIES AT HUARI.



IN AN UNINVITING ENVIRONMENT OF ROCKY, PARCHED LAND WITH AN OCCASIONAL CACTUS LIES HUARI, THE THIRD MAJOR MEGALITHIC CENTER OF THE PRE-INCAIC CULTURES OF THE SOUTHERN ANDES. 592 MILES BY HIGHWAY FROM PUKARA TO THE WEST AND NORTH, HUARI IS SITUATED A FEW KILOMETERS FROM THE PRESENT CITY OF AYACUCHO. STRATEGICALLY LOCATED BETWEEN THE AESTHETICALLY RICH COASTAL CULTURES AND THE MASSIVELY IMPRESSIVE CENTERS OF THE ALTIPLANO, HUARI REFLECTS BOTH.



ONE OF THE REASONS WHY HUARI HOLDS SUCH FASCINATION IS THAT IT CONTAINS THOUSANDS OF FRAGMENTS OF RICH POLYCHROME CERAMICS, SOME OF WHICH HAVE BEEN PAINSTAKINGLY ASSEMBLED TO FORM LARGE URNS LIKE THE ONE PICTURED. ALTHOUGH THIS URN IS FROM THE SOUTHERN COASTAL SITE OF PACHECO, IT IS VIRTUALLY IDENTICAL WITH THOSE FROM HUARI, AND THE MOTIVES CAN BE MATCHED AGAIN BY INCISED DESIGNS ON THE STONE FIGURES OF TIAHUANACO. NOTE THE FINGERS OF THE RIGHT HAND, AND THE LINES RADIATING FROM THE EYES.

ANOTHER VIEW OF HUARI, GIVING SOME IDEA OF THE JUXTAPOSITION OF THE DISTINCT TYPES OF MASONRY—A FASCINATING BUT INTRICATE PROBLEM WHICH AWAITS THE FUTURE ARCHAEOLOGIST WHO ATTEMPTS TO UNRAVEL THE MYSTERY OF THIS GIGANTIC SITE.





THE MONOLITHS FROM HUARI, PHOTOGRAPHS OF WHICH ARE PUBLISHED HERE FOR THE FIRST TIME, ARE ALL OF GRAY VOLCANIC STONE AND SHOW LITTLE EXCEPT FOR A NEAT SARTORIAL ARRANGEMENT OF CLOAKS AND MANTLES. MANY OF THE MOST SIGNIFICANT PORTIONS OF THESE IDOLS HAVE BEEN FRACTURED EITHER DELIBERATELY OR THROUGH THE PROCESS OF TIME; THEIR PERIOD MIGHT BE ESTIMATED AT ABOUT 900 A.D. THE GRUESOME FELLOW ON THE RIGHT SEEMS TO HAVE BEEN CARRYING SOMETHING IN HIS LEFT HAND, AND THERE ARE VESTIGES OF WHAT MAY HAVE BEEN FANGS ON HIS FACE. IN ANY CASE, THE BULGING CONTOURS OF THE JAW AND LOWER FACE INDICATE THAT THE MONSTER IS SOMEWHAT MORE OR LESS THAN HUMAN.

THE "ORACLE" OF HUARI, A HUGE STONE HEAD WITH A HOLE GOING COMPLETELY THROUGH THE STONE, AND WITH AN ENLARGED APERTURE NEATLY CARVED OUT IN THE REAR. THE TRADITION OF ORACLES HAS BEEN REFERRED TO BY THE CHRONICLERS, AND SPEAKING TUBES HAVE BEEN ENCOUNTERED ON THE COAST, BUT THIS IS THE ONLY EXAMPLE IN STONework SO FAR KNOWN WHICH WOULD HAVE SERVED THE PURPOSE.



SIMILAR TO HIS COLLEAGUES ABOVE, AND EVEN MORE FRAGMENTARY, THIS UNPLEASANT CHARACTER LEERS FROM THE PORCH OF A HACIENDA NEAR HUARI.



THIS BEREFT FIGURE FROM HUARI SURVEYS THE RURAL LIFE OF A SMALL PUEBLO NEAR THE SITE FROM HIS RUDE VANTAGE POINT JUST OFF THE PLAZA.



FIGURE 1. "CAESAR'S CAMP" AT HEATHROW, AS SEEN BY THE EIGHTEENTH-CENTURY ANTIQUARY STU-KELEY. THE VIEW LOOKS NORTHWARDS OVER THE THEN UNENCLOSED HEATH, WITH THE ROMAN ROAD FROM LONDON TO BATH AND PART OF THE VILLAGE OF HARLINGTON IN THE BACKGROUND.

A precautionary exploration at London Airport in 1944 revealed a unique iron-age temple. Mr. Grimes, Director of the London Museum, excavated it for the Ancient Monuments Department. He here gives a brief preliminary account of this unprecedented discovery.

A PREHISTORIC TEMPLE AT LONDON AIRPORT

By W. F. Grimes

TO the west of the sprawling area of London and its suburbs, and particularly on the north side of the river, the Thames valley opens out into a wide featureless plain of gravel and other riverine deposits. The southeastern part of this area includes the famous Hounslow Heath, now mutilated and reduced, like the rest of the region, by the outward spread of London and its industries.

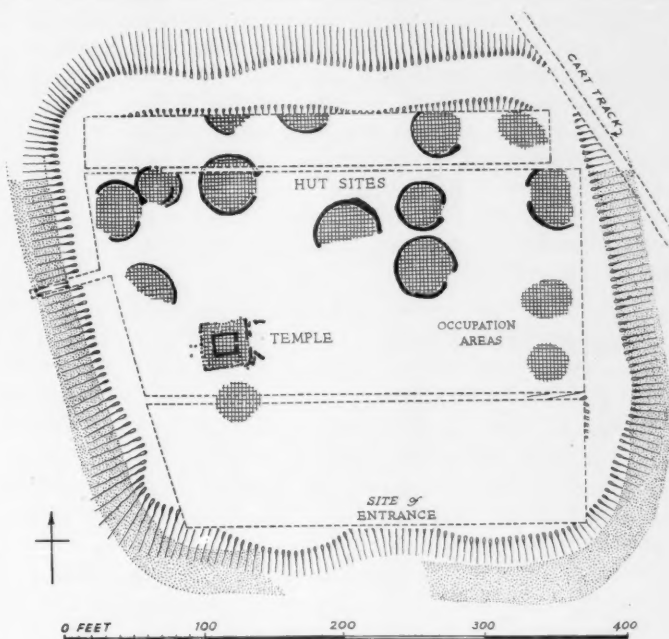
It is a well known fact, which the modern air camera has emphasized, that gravel beds of this type were much favored by early man as places of settlement. The reasons for this are not hard to discover: they are based partly on ready access to the related river, and more especially on the character of the gravel itself, with its good drain-

age and light soil, at once free from the denser natural tree-growths and easy to work for the primitive farmer.

When, therefore, towards the end of World War II it was decided to build London Airport at Heathrow it was particularly important from the archaeological point of view that the area should be watched. This task was undertaken in accordance with the normal arrangement by the Ancient Monuments Department of the Ministry of Works.

In actual fact, however, only one site was recorded, and that one which had already been known for many years. This was a small more or less rectangular earthwork which the famous anti-

FIGURE 2. A SIMPLIFIED PLAN OF THE HEATHROW SITE AS FINALLY EXCAVATED, SHOWING THE DISTRIBUTION OF THE HUT-SITES AND OCCUPATION AREAS, AND THE POSITION OF THE TEMPLE. THE STIPPLED BAND FRINGING THE RAMPART MARKS THE COURSE OF THE ENCLOSING DITCH, AS SEEN WHEN THE TOPSOIL WAS REMOVED DURING THE CONSTRUCTION OF THE RUNWAY.



quarry STUKELEY had illustrated in his *Itinerarium Curiosum*, published in 1776 (2nd edition), and called "Caesar's Camp," partly no doubt because of its proximity to the Bath Road, which was known to be Roman, partly because of its Roman-looking rectangular outline.

STUKELEY's drawing (FIG. 1) shows how well preserved the earthwork was in his day, when this part of the Heath was yet to be enclosed and cultivated. In 1944 the rampart and ditch were much spread and reduced and defied photography from the ground: the bank nowhere stood more than two feet high, its clearest indication being provided by the creep of the plough soil away from its crest, which exposed the light soil of the rampart beneath. The entrance, to the south, was barely discernible.

Clearing the Site

The camp lay directly in the line of the first runway; its destruction was to be total and the time for its examination limited. To make the result as complete as possible the Air Ministry and Messrs. Wimpey, the Contractors, provided a scraper which removed the topsoil down to a level, predetermined by hand excavation, within a couple

of inches of the undisturbed natural surface, the remainder being taken off carefully by hand. The method was safely applicable to the conditions on this site, where already deep ploughing had cut into the natural surface, thus disturbing the remains left by the occupiers on the floor of the enclosure; and it had the advantage of enabling a great deal of ground to be uncovered in a very short time. In the end, apart from narrow strips on the north and south margins, to which access was impossible because of aerodrome works, the whole site was seen and its main structures planned—in itself a valuable result in view of the fact that very few even approximately complete plans of these early settlements have as yet been obtained.

The completion of this first stage of clearing the topsoil then left the surface of the natural ground exposed over an area of almost 350 feet each way. The natural "rock" here is a light, buff-colored loam, often called "brick-earth," overlying the gravel at varying depths; and while the superficial deposits had been largely destroyed (or at least disturbed) the gulleys, pits and post-holes dug into it by the early occupiers were clearly visible as dark marks on its surface (PLAN, FIG. 2).

The objects found with these features, consisting mainly of pottery, established their date in three periods. Two small pits produced a considerable quantity of the neolithic pottery called by British archaeologists Neolithic B or Peterborough Ware, conventionally dated to 2000 B.C. or a little later. They belonged to one of many groups of this culture, traces of whose small open settlements have been found along the length of the Thames valley.

At the other end of the time-scale, a small enclosure of the later Pre-Roman Iron Age had been formed on the site, intersecting the huts belonging to the main enclosure.

But it is with the main enclosure itself that this article is really concerned; and this, the datable evidence clearly showed, went back to the dawn of the British Early Iron Age, if not actually to the transition from Bronze to Iron, the conventional date for which is 500 B.C. or a little later. Greater definition will only be possible when the mass of pottery from the site has been studied in detail. Here it must be sufficient to note that the appearance of fortified settlements of this and similar types was the inevitable concomitant of the disturbed political and economic conditions which followed the discovery and exploitation of the new metal; and that this also is the period in which the expansion of the Keltic-speaking peoples can first be clearly recognized.

Traces of Prehistoric Buildings

The really remarkable discovery in connection with this site, however, lies in the traces of the buildings found inside it.

In the northern half of the enclosure had been a series of eleven huts. The indications of their former existence consisted of a series of circular or semi-circular gulleys in two sizes, with overall diameters of about 45 and about 35 feet. The circular gulleys had entrance-gaps; they frequently had deeper, sump-like ends. The obvious explanation was that they served as drains for surface and roof-water and their fillings were a fairly uniform dark soil in which occasional fragments of bone and pottery were found.

Within the area of such gulleys on other sites, post-holes have often been found and are reasonably interpreted as the lasting elements of the

frame on which the structure of the hut was supported. At Heathrow such post-holes occurred in some huts but were rare or absent in others; the roofs of the latter group may have been supported on walls of solid but perishable materials such as turf, of which all traces had disappeared. There were no traces of internal structures apart from one or two hearths or fire-pits; but the hearths also were often outside the hut, at or near the entrance.

Elsewhere distributed over the area were signs of less organized occupation: areas of dark soil which though ploughed through produced their quota of potsherds; a few pits and post-holes. About half of the enclosure, however, appears to have been a blank: the main occupation was under the lee of the ramparts on the north side of the compound.

This picture of a comparatively small domestic area with a large vacant space is in keeping with what has been observed on many other of these small settlements which have been more or less completely explored. It would seem that such "empty" spaces were essential to the life of the settlement, serving no doubt for various nondescript activities, but especially for the folding of stock when it had to be brought into the compound.

Marks of an Iron Age Temple

The most important and exciting discovery on the site, however, remains to be described. Half-way along the west side of the compound near the base of the bank, the first clearing of the top-soil revealed the outline of a rectangular gully, its main axis roughly east-west, with an entrance opening in its east side. The gully was small: $1\frac{1}{2}$ –2 feet wide, its overall length 18 feet, its width 13 feet. Surrounding it 6–8 feet away was a series of circular or sub-rectangular marks suggesting large post-holes (up to about 14 inches in diameter) sometimes spaced out, sometimes run together to form irregular single marks. The overall dimensions of the complete structure were 37 by 32 feet.

The possible significance of this arrangement was at once apparent: its resemblance on plan to the classical Greek temple, with central shrine or cella and enclosing peristalith, opened up the interesting and important likelihood that this would prove to be a temple earlier than any yet recorded

in Britain, carrying with it important implications as to its cultural contacts.

The central mark proved to be a shallow trench with deeper post-holes at corners and doorway (FIGS. 3 and 4); the peristalith consisted of single post-holes, closely set at the angles but spaced out along the sides; the continuous marks were due to the replacement of old posts by new, the new holes being dug close to or actually intersecting the old. The post-holes were not very deep, and while this may have been due in part to the reduction of the ground by cultivation it also seems likely that the posts were in fact shallowly set, the building depending for its stability on the way in which the parts were lashed or otherwise held together.

More complete knowledge of the building therefore confirmed first impressions; it must have consisted of a central shrine built with solid walls, log-cabin fashion, with a pitched roof which probably extended outwards in one piece to span the peristalith.

We have then a building showing a remarkable resemblance to a Greek classical temple as part of a native British settlement which dates from the Bronze-to-Iron Age transition and can hardly at the outside be later than 300 B.C.

Discovery Yields Clues for Research

Two questions are raised by this discovery, neither of which can be discussed fully here; their answers in any case depend on research which has yet to be completed.

First, how did this form, developed in stone in such perfection by the Greeks, come to be used by non-Mediterranean barbarians? Did they invent it independently; or did they derive it from contact with the Mediterranean world? The second explanation is at least as likely as the first, especially when it is remembered that a large element in the Keltic art, which was being developed at this time, is derived from Greek art-forms, borrowed and modified by Keltic craftsmen. Though the circumstances are not quite the same, the borrowing of an art-form might be paralleled by the borrowing or imitation of an architectural form, perhaps also through the medium of the Etruscans, by whom Greek products were transmitted northwards to the Keltic lands.

Secondly, are we to see here the origin of the Romano-Keltic temple? This name is applied to an extensive series of small structures which show essentially the same elements, though usually in stone: a central shrine, with a peristalith in which the columns are supported on a sleeper-wall, so that as excavated the remains generally consist of an inner and an outer wall parallel with one

HEATHROW: PLAN of the TEMPLE

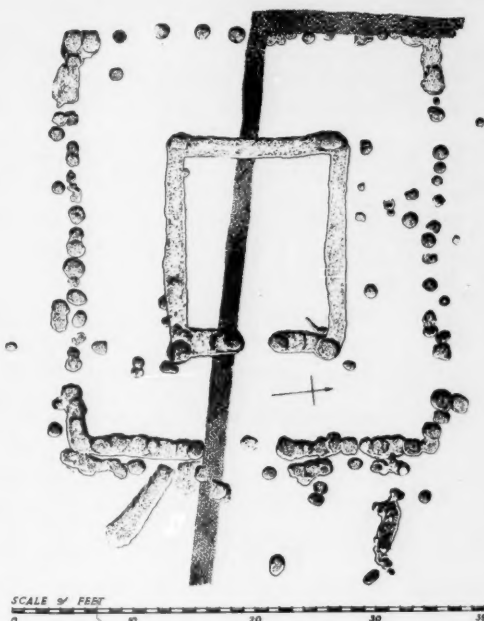


FIGURE 3. PLAN OF THE HEATHROW TEMPLE, AT LONDON AIRPORT, AS EXCAVATED, WITH THE TRENCH FOR THE CENTRAL SHRINE AND THE POST-HOLES FOR THE ENCLOSED COLONNADE. (THE SHADED STRIP IS PART OF ANOTHER UNRELATED STRUCTURE.)

another. Such temples are known in some numbers in the predominantly Keltic areas of the Roman Empire, a fact which (combined with the absence of a recognizable prototype in Roman architecture) has given them their name. We cannot suggest that the Heathrow temple is itself the father of the Romano-Keltic type; on general grounds it is more likely that the latter was developed on the Continent and in northern Gaul in par-

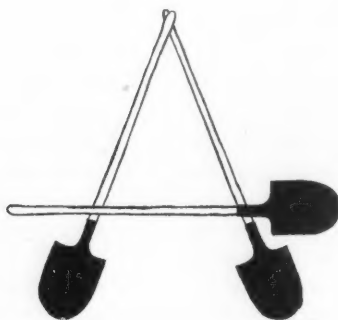


FIGURE 4. GENERAL VIEW OF THE HEATHROW TEMPLE IN ITS FINALLY EXCAVATED FORM, FROM THE NORTHEAST.

ticular. But the Heathrow building nevertheless provides the clue to the source from which the Romano-Keltic temple sprang. Future research may enlarge or modify this view of the barbarian

debt to classical culture in the world of architecture; in any case, the Heathrow temple becomes the first undoubted example of a prehistoric Iron Age temple to be recorded in Britain.*

* It must be emphasized that the description is a summary one and the conclusions tentative; a full detailed account will be published under the aegis of the Ministry of Works in due course. The finds from the site have been placed in the London Museum by the Ham River Sand and Gravel Company, the owners of the land.



The Greek word ostrakon means "shell" and was applied to the hard wall of a clay vessel; it is derived from ostreion ('oyster'). The names of those to be exiled were written on sherds of broken pottery, ostraka, hence the name ostracism.

OSTRACISM

By Antony E. Raubitschek

"The law of ostracism was passed because of the (people's) mistrust of those in power, since the popular leader and general Peisistratos had established himself as a tyrant." (Aristotle)

IF one compares the paragraphs of the Constitution regulating the election of the President with the actual procedure, he will pity the man who is familiar only with the former and yet claims to know how an American president is elected. For not only would he be ignorant of the turmoil of an election campaign but he would probably be unaware of the political party machines, or even of the very existence of the two political parties and their traditional exclusiveness.

A student of Athenian ostracism is very much in the position of such a man. He knows that the Athenians had a law providing for the ten-year exile of anybody who was considered a dangerous political leader by a reasonably large majority of the Athenian electorate. He would also know that this law was passed towards the end of the sixth century, when Kleisthenes established the democratic constitution; that every year, late in the winter, an assembly of the Athenians decided by a show of hands whether or not an ostracism was to take place.

In order to preserve the secrecy of the final vote, no names were mentioned at that time, and indeed no names were ever mentioned officially, nor was it permitted to make any formal accusation or defence. Similarly, our electoral campaigns are not carried on in the formal political

assemblies, and any violation of this rule, especially by those in office seeking reelection, is resented by the electorate and condemned by the opposition. This does not mean, and it cannot possibly mean, that public opinion could crystallize, or was permitted to do so, without any organized and lively propaganda, and it is only natural that such propaganda should be both partisan in spirit and violent in language.

If the assembly decided that an ostracism should be held, a date was set for the ostracism itself. It had to take place within two months of the original vote. The election of the generals (strategoi) was held at approximately the same time. Unlike most of the other public officials, the generals were elected (and not chosen by lot), and it is not surprising, therefore, that some of these generals became political leaders. It is even less surprising that most of the famous political generals of the fifth century were either ostracized or came close to it; Xanthippos the father of Perikles; Aristides; Themistokles; Kimon; Thucydides the son of Melesias; Perikles; Nikias; Alkibiades. It seems reasonable, therefore, to suppose that the election of the generals and the vote of ostracism took place on one and the same day, and that more than once a valid vote of ostracism removed from the list of eligibles a candidate for the generalship who would otherwise perhaps have been successful.

On the day set for ostracism, the marketplace (Agora) was fenced off leaving only ten gates through which entered the citizens, separated according to their tribes. They deposited the bal-



FIGURE 1. OSTRAKON OF HIPPARCHOS, SON OF CHARMOS, A DISTANT RELATIVE OF THE TYRANT PEISISTRATOS. HIPPARCHOS STAYED IN ATHENS AFTER HIPPIAS WENT INTO EXILE, AND ARISTOTLE TELLS US THAT THE LAW OF OSTRACISM WAS PASSED IN ORDER TO GET RID OF HIPPARCHOS. IN FACT, HE WAS ELECTED ARCHON FOR 496/5 B.C., AND IT WAS NOT UNTIL 487 B.C., AFTER THE BATTLE OF MARATHON WHEN ANTI-PEISISTRATID FEELING FLARED UP AGAIN, THAT HE WAS ACTUALLY OSTRACIZED.

NOTICE THE ARCHAIC WRITING, THE CHI IN THE FORM OF AN UPRIGHT CROSS AND THE SINGLE PI IN THE NAME OF HIPPARCHOS. NOTICE ALSO THAT THE NAME IS ACCOMPANIED BY THE FATHER'S NAME AND NOT BY THE DEMOTIC, WHICH HAD BEEN INTRODUCED BY KLEISTHENES, BUT WAS IGNORED BY THE "NOBLES" FOR A WHOLE GENERATION FOLLOWING ITS INTRODUCTION.



FIGURE 2. MEGAKLES, SON OF HIPPOKRATES, PRESUMABLY THE NEPHEW OF KLEISTHENES, WAS A MEMBER OF THE ALKMEONID FAMILY. HE WAS OSTRACIZED IN 486 B.C., IN THE YEAR FOLLOWING THE OSTRACISM OF HIPPARCHOS (SEE NO. 1). HE WAS THE GRANDFATHER OF ALKIBIADES THE YOUNGER, AND THE UNCLE OF PERIKLES, WHOSE MOTHER AGARISTE WAS THE SISTER OF MEGAKLES. ARISTOTLE SAYS THAT MEGAKLES WAS EXILED BECAUSE HE WAS ONE OF THE FRIENDS AND SUPPORTERS OF THE TYRANT HIPPIAS (WHO HAD ACCOMPANIED THE PERSIANS AT MARATHON, HOPING TO BE RESTORED BY THEM AS THE RULER OF ATHENS). IF THIS IS TRUE, THE OSTRACISM OF MEGAKLES WOULD BE A CLEAR INDICATION THAT A GREAT NUMBER OF PEOPLE BELIEVED THE STORY (LATER TOLD BY HERODOTUS) THAT THE ALKMEONIDS WERE IN TOUCH WITH THE PERSIANS AND SUGGESTED TO THEM BY SIGNALS THAT THEY SHOULD ATTACK ATHENS FROM PHALERON AFTER THEY HAD FAILED AT MARATHON.



FIGURE 3. XANTHIPPOS, SON OF ARRIPHON, WAS OSTRACIZED IN 484. HE HAD SERVED AS MILTIADES' ACCUSER IN 489 B.C., HE WAS RECALLED TOGETHER WITH ARISTEIDES AND THE OTHER EXILES JUST BEFORE THE BATTLE OF SALAMIS, AND HE LED THE ATHENIAN FLEET IN THE VICTORIOUS NAVAL BATTLE AT MYKALE (479 B.C.). ARISTOTLE, IN WRITING ABOUT HIS OSTRACISM, SAYS THAT HE WAS NOT CONNECTED WITH FRIENDS OF THE EXILED TYRANT HIPPIAS; HE WAS A POPULAR LEADER AND NOT A PARTISAN OF THE PRO-SPARTAN ARISTOCRACY.

SOMETIME BEFORE 490 B.C., XANTHIPPOS HAD MARRIED THE NIECE OF KLEISTHENES, AGARISTE, THE DAUGHTER OF HIPPOKRATES AND THE SISTER OF MEGAKLES (OSTRACIZED IN 486 B.C.; SEE NO. 2). THIS CONNECTION WITH THE ALKMEONID FAMILY MAY HAVE BEEN PARTLY RESPONSIBLE FOR HIS OSTRACISM. AT ANY RATE, ONE OF THE AGORA OSTRAKA BEARING HIS NAME CONTAINS A LITTLE POEM WHICH DEMANDS THE OSTRACISM OF XANTHIPPOS AS ONE OF THOSE WHO WERE UNDER THE "CURSE" (THE ALKMEONIDS WERE ACCUSED BECAUSE ONE OF THEIR ANCESTORS HAD BEEN RESPONSIBLE FOR THE SLAYING OF THE FOLLOWERS OF KYLON):

"THIS SHERD DECLARES THAT XANTHIPPOS, ARRIPHON'S SON,
HAVING DEFILED THE HOLY HEARTH, IS FULL OF GUILT."

XANTHIPPOS' SON, PERIKLES, WAS ALSO DENOUNCED AS ACCUSED BY THE ENEMY WHO WANTED TO GET RID OF HIM JUST BEFORE THE OUTBREAK OF THE PELOPONNESIAN WAR.



FIGURE 4. ARISTEIDES, SON OF LYSIMACHOS, WAS, ACCORDING TO ARISTOTLE, OSTRACIZED IN 482 B.C. IN CONNECTION WITH THE CONTROVERSY OVER THE USE OF THE INCOME FROM THE NEWLY-DISCOVERED SILVER MINES AT MARONEIA, ON THE EAST COAST OF ATTICA. THEMISTOKLES SUGGESTED AND CARRIED THE PROPOSAL THAT THE MONEY SHOULD BE "LOANED" TO THE SHIPBUILDING INDUSTRY IN ORDER TO ENCOURAGE THE CONSTRUCTION OF AN ATHENIAN NAVY. ARISTEIDES, WHO TOGETHER WITH THEMISTOKLES WAS THE POLITICAL LEADER OF THE PEOPLE, SEEMS TO HAVE OPPOSED THEMISTOKLES ON THIS ISSUE. IN THIS CASE, OSTRACISM RATHER THAN A VOTE IN THE ASSEMBLY DECIDED WHICH POLICY WAS TO BE CARRIED OUT. IN SPITE OF HIS EXILE, ARISTEIDES DID NOT LOSE POPULAR ADMIRATION, AND IN THE LONG RUN IT WAS THEMISTOKLES WHO SUFFERED FROM THIS CLEVER POLITICAL TRICK, ALTHOUGH IT HAD SECURED THE GREEK VICTORIES AT SALAMIS AND AT MYKALE.

FIGURE 5. THEMISTOKLES, SON OF NEOKLES, FROM THE DEME PHREARRIOI, WAS OSTRACIZED IN 471 B.C., BUT IT HAS BEEN CLAIMED THAT ALMOST ALL OF THE 535 OSTRAKA BEARING HIS NAME BELONG TO THE YEAR 482 B.C. WHEN ARISTEIDES WAS OSTRACIZED (SEE NO. 4). IF THIS IS TRUE, IT WOULD PROVIDE ADDITIONAL EVIDENCE TO SHOW THAT THE CAMPAIGN OF 482 B.C. WAS HOTLY CONTESTED. NEITHER CANDIDATE REALLY AIMED AT TYRANNY; NOR WAS TYRANNY THE ISSUE OF THEMISTOKLES' OSTRACISM IN 471 B.C. WITHIN A YEAR AFTER HE HAD LEFT ATHENS FOR ARGOS, HE WAS CONDEMNED *in absentia* BECAUSE OF ALLEGED COMMUNICATIONS WITH PERSIA. IT IS LIKELY THAT THE EXPEDIENT OF OSTRACISM RATHER THAN AN OPEN COURT TRIAL WAS USED AGAINST THEMISTOKLES SINCE THE CHARGES OF CONSPIRACY WITH THE ENEMY WERE GENERALLY BELIEVED BUT COULD NOT EASILY BE SUBSTANTIATED. NOTICE THE WRONG SPELLING OF THEMISTOKLES' NAME IN BOTH OSTRAKA ILLUSTRATED; IN THE SECOND, THE THETA WAS CORRECTED INTO TAU. ONE OSTRAKON GIVES THE FATHER'S NAME, THE OTHER THE DEMOTIC OF THE "UPSTART" THEMISTOKLES.



FIGURE 6. PERIKLES, SON OF XANTHIPOPOS, WAS NEVER OSTRACIZED, AND THE ONE OSTRAKON BEARING HIS NAME MUST THEREFORE BELONG TO AN OSTRACISM IN WHICH SOMEONE ELSE WAS EXILED OR IN WHICH THE REQUIRED NUMBER OF VOTES WAS NOT ATTAINED AND THE VOTING WAS DECLARED INVALID. IT IS ACCORDINGLY IMPOSSIBLE TO SAY WHEN THIS OSTRAKON WAS CAST. IT CAN HARDLY BE MUCH EARLIER THAN 471 B.C. NOR CAN IT BE MUCH LATER THAN 443 B.C. THE QUESTION IS FURTHER COMPLICATED BY THE SIGNIFICANT FACT THAT ALMOST ALL THE OSTRAKA FOUND IN THE GERMAN EXCAVATIONS IN THE DIPYLON BELONG TO OSTRACISMS WHICH TOOK PLACE AFTER 465 B.C., WHILE ALMOST ALL THE OSTRAKA FOUND ON THE AKROPOLIS, ON ITS NORTH SLOPE, AND IN THE AGORA BELONG TO THE FEW OCCASIONS WHEN OSTRACISMS WERE HELD BEFORE 480 B.C. THE PERIKLES OSTRAKON, WHICH WAS FOUND IN THE AGORA, IS THUS UNUSUAL IN MANY RESPECTS, BUT IT IS CHARACTERISTIC OF THE VAST NUMBER OF SHERDS WITH NAMES OF MEN WHO ARE EITHER ENTIRELY UNKNOWN OR/AND WERE CERTAINLY NOT OSTRACIZED.



FIGURE 7. HYPERBOLOS, SON OF ANTIPHANES, WAS OSTRACIZED IN 417 B.C. HIS OSTRACISM IS PERHAPS THE MOST REMARKABLE CASE BECAUSE HE WAS THE LAST ATHENIAN TO BE SO PUNISHED, AND BECAUSE WE KNOW A GREAT DEAL ABOUT THE CIRCUMSTANCES OF HIS EXILE. THE ONLY TWO SHERDS BEARING HYPERBOLOS' NAME HAVE BEEN FOUND IN THE AGORA EXCAVATIONS; ONE OF THESE, DISCOVERED IN 1947, IS ILLUSTRATED HERE. HYPERBOLOS WAS THE LEADER OF THE ATHENIAN PEOPLE AFTER THE DEATH OF KLEON, WHO IN TURN HAD SUCCEEDED PERIKLES. BOTH KLEON AND HYPERBOLOS WERE HATED AND DESPISED BY THE COMIC POET ARISTOPHANES AND THE SLIGHTLY-RIGHT-OF-CENTER HISTORIAN THUCYDIDES, AND THIS IS THE MAIN REASON WHY MODERN HISTORIANS DO NOT THINK MUCH OF EITHER KLEON OR HYPERBOLOS. THEY CONDEMN HYPERBOLOS FOR HIS LOWLY ORIGIN (HE WAS A LAMP-MAKER), AND FOR HIS IRRESPONSIBLE ORATORY (HE WAS A "DEMAGOUE"), AND THE MAN WHO USED THE AGORA OSTRAKON MAY HAVE CHOSEN THE SHERD BECAUSE OF THE APPROPRIATE PICTURE OF A GOOSE ON THE REVERSE), AND THEY REPEAT THE ANCIENT VERDICT THAT OSTRACISM WAS DISCONTINUED BECAUSE IT HAD BEEN DISGRACED BY HYPERBOLOS. ACTUALLY, HYPERBOLOS WAS TRYING TO HOLD HIS OWN IN POPULAR FAVOR AGAINST THE RISING ALKIBIADES, AND HIS CHANCE SEEMED TO HAVE COME WHEN ALKIBIADES TRIED TO INVOKE THE LAW OF OSTRACISM AGAINST NIKIAS, THE FAMOUS GENERAL. REALIZING THE POSSIBILITY OF BEING OSTRACIZED HIMSELF IF HYPERBOLOS SHOULD THROW HIS SUPPORT TO NIKIAS, ALKIBIADES JOINED HANDS WITH NIKIAS, AND HYPERBOLOS WAS OSTRACIZED. THIS "GLORIOUS" VICTORY OVER THE PROLETARIAN HYPERBOLOS VIRTUALLY ENSURED ALKIBIADES' ASCENDENCY AND WITH IT THE SICILIAN EXPEDITION.

lots in boxes which stood near the entrances. The nine archons and their secretary, as well as the members of the Boule, fifty from each of the ten tribes, stood at the gates where the citizens of their tribe had to enter. These officials could thus exercise an adequate, though superficial, check on the voters who filed past them.

The voter wrote on his ostrakon the name of the person whom he wished to be exiled, occasionally in the form of a little poem (see No. 3) or with the addition of some such words as "get out"; some even added the scratched picture of their "candidate." No one can forget the story of the illiterate Athenian who asked Aristides to write his name on a ballot; asked what he had against Aristides, he replied that he was sick of hearing him called "the Just." An Aristides ostrakon was found in the Agora excavations which contained, in addition to some feeble attempts at writing the name, a beautifully written: Aristides, son of Lysimachos.

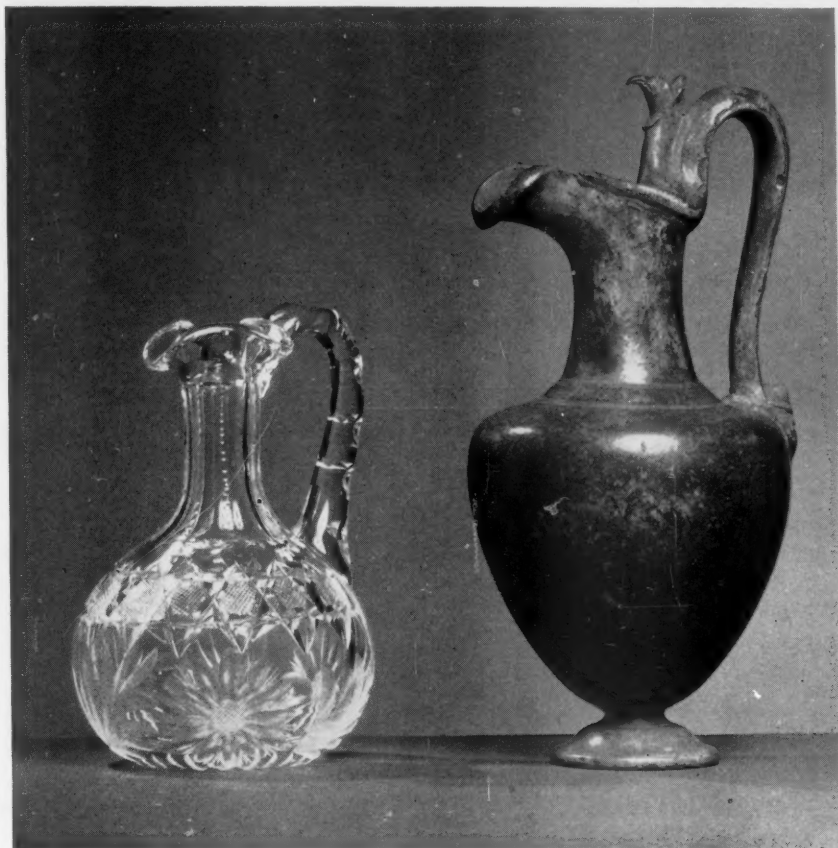
After the votes were cast, a rough count was made by the archons in order to determine whether the required number of six thousand had expressed their will. If that was the case, the ballots were separated according to names and counted once more. The man against whom most votes had been cast was then declared ostracized; he had to leave Athens within ten days and stay away for ten years. During his absence and after his return, or in case he should be recalled by vote of the assembly, he remained in full possession of his civil rights and of his property.

Most of the story, as told so far, could have been written even before the discovery, more than sixty years ago, of Aristotle's essay on the *Constitution of Athens*. Even the physical appearance of the ostraka had been deduced from ancient descriptions. Indeed, we know now that

the Athenians of the sixth century used clay sherds for brief messages, and such "letters" have been found in the Agora excavations and elsewhere. Clay sherds had been used for the same purpose, even at an earlier time, in faraway Palestine.

The first real ostrakon was made known in 1883 by the Austrian BENNDORF; it had been found on the Akropolis of Athens. When OTTO W. REINMUTH of the University of Texas completed his "Ostrakismos" article in 1939, he could report that 527 ostraka had been found, of which the Agora excavations had supplied 477. The Germans found 155 more ostraka between 1930 and 1938, and OSCAR BRONEER discovered 191 sherds in his excavation on the North Slope of the Akropolis in 1937. At this moment the grand total is 1502, of which 1280 were found in American excavations.

No detailed discussion can be given here of the men whose names appear on these ostraka, many known and even more unknown. May it suffice to say that all the names of men known from literary sources to have been "candidates" can now be found on actually preserved ostraka: Alkibiades, both the older (5 ostraka), and the younger (2); Aristides (59), Damon (1), Hipparchos son of Charmos (11), Hyperbolos (2), Kallias son of Didymias (3), Kimon (70), Megakles (14), Menon (84), Perikles (1), Phaiax (4), Themistokles (535), Thucydides son of Melesias (13), Xanthippos father of Perikles (17). The accompanying selection of illustrations (most of them hitherto unpublished) contains merely a few choice pieces from the files of the Agora excavations. The final publication of all the ostraka, together with a comprehensive study of Athenian party politics, is being prepared by EUGENE VANDERPOOL and RODNEY S. YOUNG in collaboration with this reporter.



OIL CRUETS, THEN AND NOW

A ROMAN BRONZE JUG OF THE FIRST CENTURY A.D., FOR DROPPING OLIVE OIL ON FOOD, PAIRED WITH A GLASS CRUET OF MODERN AMERICAN MANUFACTURE, DESIGNED FOR THE SAME PURPOSE. MODELED AFTER GREEK PROTOTYPES, AND OF ESTHETICALLY SATISFACTORY FORM, THE ROMAN VESSEL WAS NONE THE LESS A MASS PRODUCT.

"Kitchen and Banquet," an exhibition of Greek, Etruscan, and Roman metalware for kitchen and dinnertable use, assembled from specimens in the collection of the Walters Art Gallery, Baltimore, by DOROTHY KENT HILL, opened at the Gallery on May 1, 1948, and is to continue through the summer.

Mr. Colt, the excavator of Sbeita and Auja, in southern Palestine, and the discoverer of the famous Colt Papyri, gives his impressions of the ruined Byzantine hill-forts on the frontiers of Arabia.

CASTLES IN ZIN

By Harris Dunscombe Colt

Southern Palestine is a land of rolling hills, dry and stony, cut through by shallow valleys and bearing nothing but stunted tamarisk and acacia bushes.

This is the triangle of barren land now known as the Negeb, the Southern Desert, which, commencing at Beer-sheba, extends westward almost to the Mediterranean coast and southeastward to the Gulf of Akaba. This is the desert that was named in the Bible (Exodus, 16:1) the Wilderness of Zin, through which the Children of Israel wandered after their flight from Egypt. It is not a true sandy desert, but is akin to the scrublands of our own western states.

The desolation is due only to lack of water, and during the short rainy season the present inhabitants find it quite possible to produce a small harvest of crops. The country, moreover, was not always the waste it now is, for in the early part of our era it supported several towns of considerable size, as well as a large settled population which lived scattered throughout the little valleys; but it never could have been a land of plenty, and existence must always have been hard, with the fear of famine lurking in the background.

About the early inhabitants of the Negeb nothing is known, as there has been very little archaeological activity in this field. Excavations, two of which were merely sondages, have been made on only four sites. Up to this time, no evidence has been found of any permanent settlements antedating the third century B.C., although the discovery of finely worked neolithic flints indicates the possibility of some Stone Age civilization. There is also, on a site near the perpetual spring of Ain el Gudeirat, in the southern part of the Negeb, a fort of an early age, probably antedating Hellenistic occupation. Until more cor-

roboration is produced, however, these indications of ancient habitation must be regarded only as the weakest of links with the past. In the case of the fort at Ain el Gudeirat, the only evidence of pre-Roman-Byzantine occupation offered hitherto has been the find of a few potsherds reportedly of the late Bronze Age, but the discovery on this site of pottery in an amount adequate for reliable dating has yet to be made.

Agriculture came late to the Negeb and it was not until the third century A.D., that this district began to develop and flourish. Its prosperity reached a zenith in the middle of the seventh century A.D., after which a steady decline set in; by the tenth century it had returned to its former state of wilderness. The reasons for this are readily apparent. The Negeb had always been the grazing area of wandering, marauding tribes, against whom some kind of protection was necessary if settled husbandry was to be initiated and maintained. In the third century B.C., the Nabatean kingdom of Petra rose to power, and took control of the caravan routes crossing southern Palestine from the head of the Gulf of Akaba to Gaza on the Mediterranean coast; and under its aegis a few small towns developed as outposts along these routes. While no large settlements were developed, small groups of people gathered around these military posts and an agricultural life was slowly evolved.

Trajan's conquest of Petra, in 106 A.D., put an end to the Nabatean sway, but, in turn, the Romans left behind them military posts and patrols to repulse the ever-encroaching desert dweller. Under this form of regular protection, agriculture finally was developed on a large scale and a settled population took root in an area which had never before afforded much reward to its inhabitants. This state of peace and plenty lasted until the time of the

Arab conquest in 634 A.D., when the defeat of the Byzantine army removed the old controls.

The invading Arab was the brother of the Arab nomad and lacked reasons for maintaining defences against him. Forts in these southern lands were no longer manned and military precautions were discarded. Slowly the desert reasserted itself against the laboriously-won farmlands. Slowly the goat and camel denuded the countryside. City-folk and farmers alike abandoned the province and moved northward to seek new fortunes in areas of greater fertility and population. The process of deterioration was a slow one, but within three centuries of the conquest the cycle had been completed; the Negeb lay quiescent in the hot sun of the Arabian desert, its fields and orchards gone, its towns in ruins.

The Era of Prosperity

The era of prosperity—that is, the five centuries between 106 A.D. and 634 A.D.—saw the development of several good-sized towns containing populations which varied from 6,000 persons in the smaller ones to possibly 20,000 in the largest. Auja el Hafir (then named Nessana), Abda (Eboda), Sbeita (Sobata), Khalasa (Elousa), Kurnub (Mampis), Ruheiba, and three small settlements at Ain el Gudeirat, Bir Birein and Mishrifa all date from this era. The exact history of these desert towns is not yet known, though it may be safe to generalize about them from the results of the archaeological discoveries at Auja el Hafir and Sbeita. The former site unexpectedly

produced a great number of papyrus records, a rare find which has thrown considerable light on the daily life of those times.

In appearance the towns generally resembled one another. Each was enclosed by a wall formed merely by conjoining the backs of houses, and presenting no real obstacle to any kind of determined attack. As a defense, however, against the pounce-and-run kind of raid made by the marauding Bedouin it presented an adequate barrier. Large and carefully-built forts were found at Auja el Hafir, Kurnub and Abda, and it is safe to assume that they contained permanent garrisons, as these towns were on the main caravan routes and were probably important stations. But it is doubtful if, at the time when these forts were built (during the later years of the Byzantine occupation), troops were needed for any heavier duty than routine patrolling. The small modern police posts stationed today in south Palestine and Sinai must perform very much the same function, as their forces ride out on regular tours of the countryside from their permanent stations, two of which are actually placed at Auja el Hafir and Kurnub. The impression that these Byzantine forts were meant to be places of temporary refuge, rather than housings for large garrisons, is strengthened by the absence of elaborate arrangements within the forts, which are very often simply large empty squares into which, conceivably, a crowd of people could be gathered for safekeeping while the armed protectors routed the bandits.

Another aspect common to the appearance of these towns was that all were built of stone which was cut out of the



FIGURE 1. STANDING ISOLATED IN THE ROCKY TROUGH OF A BROAD WADI, THE RUINS OF SBEITA, THE BYZANTINE SOBATA, STILL DOMINATE THE DESERT LANDSCAPE. THIS VIEW OF THE NORTH END OF THE TOWN SHOWS REMAINS OF SIXTH-CENTURY A.D. PRIVATE HOUSES.



FIGURE 2. AT THE EDGE OF SBEITA'S RUINS, THE BEDOUIN FAMILIES WHO WORKED AT THE EXCAVATIONS HAVE PITCHED THEIR GOAT'S-HAIR TENTS AND BUILT TEMPORARY CORRALS FOR THEIR ANIMALS.

surrounding countryside, since water in that arid land is much too precious to waste in making mud bricks and wood is practically nonexistent. This local stone is an interesting variety of limestone which turns a deep honey color on exposure to the air. It is found extensively in three qualities, one of which is a hard crystalline type and was used in large rough blocks for the foundations and lower courses of buildings. A finer-grained variety, hard but capable of being carved, was used for doorways, pilasters and the more ornamental parts of the houses; and a third kind, almost of the consistency of chalk, which though very easily cut hardens on exposure to the air, was used for the upper courses.

The ground plans for these towns were not laid out in the orderly way of the Romans, with provision for wide thoroughfares and colonnaded squares, but followed the haphazard eastern pattern of narrow winding streets with many culs-de-sac. Houses were built to enclose courtyards and sometimes gardens but the elevations facing into the streets were left almost blank, any decoration being confined to the doorways, which often had carved lintels and jambs. The windows were mere slits in the walls, serving only as air-vents; in a country where there is burning sunlight for the major part of the year, it is best to keep the sun's rays out as much as possible.

Most houses were two stories high and all had flat roofs which provided outdoor sleeping space during the hot, dry summer nights, and collected rainwater for the courtyard cisterns during the cold, wet winter months. In many instances the houses were quite large, some even

containing two courtyards. It was customary for several married brothers and sisters to live in one house, each family having its own suite of rooms and all sharing the use of the courts. An interesting example of this custom was found among the papyri of Auja el Hafir, one of which was a long document concerning the apportionment of an estate, by which the house was divided among the heirs, various rooms being assigned to specific individuals with provisions for their joint use of the courtyard.

The method of construction which generally prevailed for houses was dictated by the building material at hand, the limestone of the district. As wood was not available it was necessary to cut stone even for the ceilings and roofs. Vaulting seems never to have been employed and the practice was to place flat slabs over a series of arches spanning the rooms. The spacing of the arches was governed by the size of the stone slabs, which were generally a little over three feet in length, so that the arches were also about three feet apart. In the Negeb corbelling above the arches in order to increase the spaces between them was not resorted to although it was very common in Syrian houses of the same period. The arches themselves were usually carried on pilasters built against the wall, but occasionally they sprang directly from the wall. Pilasters were ordinarily about three and a half or four feet in height and ended in a simple splayed cap.

The flat slabs forming the ceilings were always rough-cut, so they were plastered on the underside and leveled off on top with a screed of lime-cement, to make a water-proof roof or the floor for a room above. The houses were



FIGURE 3. THE HOUSES OF ABDA, THE EBODA OF THE NABATAEANS AND ROMANS, SURVIVE ONLY AS JUMBLED PILES OF RUBBLE (FOREGROUND). THE MASSIVE SIXTH-CENTURY FORTIFICATION WALLS AND TOWERS, HOWEVER, HAVE FARED BETTER, AND IN SOME PLACES STAND TO THEIR ORIGINAL HEIGHT.



FIGURE 4. ABDA STANDS DOMINATING ITS WADI FROM THE CREST OF A ROCKY HILL. THE VALLEY FLOOR, AFTER THE SPRING RAINS, RAISES A SPARSE CROP OF WILD BARLEY WHICH PROVIDES THIN SUSTENANCE FOR A FEW BEDOUIN SHEEP AND GOATS; DURING THE REST OF THE YEAR, NOTHING GROWS BUT TAMARISK BUSHES.



FIGURE 5. AT THE TOP OF THE SLOPE, A LONG-ABANDONED BYZANTINE VILLA OUTSIDE THE WALLS OF ABDA LOOKS OUT ACROSS THE GREAT WADI, SHIMMERING IN THE NOONDAY SUN.



FIGURE 6. FROM THE MIDDLE OF THE WADI AUJA RISES A LOW HILL ON WHOSE SUMMIT IS STILL ANOTHER RUINED BYZANTINE FORTRESS, KNOWN TO THE LOCAL ARABS AS AUJA HAFIR, BUT IN EARLY CHRISTIAN TIMES AS NESSANA. THE AUTHOR'S EXCAVATIONS IN THE SIXTH-CENTURY CHURCH OF STS. SERGIUS AND BACCHUS, WITHIN THE FORT, YIELDED THE SENSATIONAL COLT PAPYRI, THANKS TO WHICH NESSANA HAS BECOME THE BEST-UNDERSTOOD ANCIENT SITE IN THE REGION.

THE RUINS IN THE FOREGROUND BELONG TO THE PERIOD OF WORLD WAR I.

also usually plastered inside, and the floors were commonly of beaten earth, although the more important rooms and the courtyards were paved with limestone. Doorways were either square-headed or arched, the latter being the case for the larger ones, which were then equipped with double doors. Most rooms were provided with cupboards set in the walls and in many cases seem to have had wooden doors.

Church Architecture

In marked contrast to the simplicity of the houses was the amount of decoration lavished on the churches. Structurally, these were all basilicas, with an unusual feature: the predominance of the tri-apsidal church (eight out of the thirteen churches excavated), which elsewhere in Syria and Palestine was rather infrequently used. Most churches, too, seem to have had baptistries, as well as

separate chapels attached to the church itself. All these buildings presented a plain exterior, but within they contained a great display of marble, carving, frescowork, and mosaic. A blue-veined white marble imported from Asia Minor was laid in large slabs for flooring and sometimes was used as wainscoting. The walls of the apses were either lined with marble or painted, and quite frequently there were additions of porphyry or mosaic decoration.

The carving most commonly used was that type known as "chip carving" which is almost entirely geometrical in design and has been in use in Palestine for the last three thousand years. However, the designs in use in the Negeb seem to have been of local inspiration and not to have counterparts elsewhere. Oddly enough, some bear strong resemblance to the designs used in the decoration of the Norman churches in England. There is a modified dogtooth, for instance, which appears on the face

of arches and on abaci of pilasters. Another design is that of a square or oblong divided into segments in a union jack pattern, which is found often on pilaster caps and on the bases of door jambs. Other patterns used were discs with varieties of petal designs and crosses. While the disc patterns and the crosses are found in Byzantine buildings in many other parts of Asia Minor, the union jack pattern seems to be limited to the Negeb.

Another interesting variation in ecclesiastical architecture from the general type was the use of wood for ceilings and roofs. Here the spans were of such size that the local stone could not be employed and wood had to be imported. Among the fragments recovered from the ruins of Sbeita and Auja were specimens of Cedars of Lebanon, so that the builders of the Christian churches must have emulated Solomon in importing wood from Syria.

Surrounding the churches, and attached to them, there were often to be found large collections of courtyards and rooms, which were in all probability monasteries. This supposition is strengthened by our knowledge that during the fourth and fifth centuries there was a sudden exodus into the desert of devout churchmen, who wished to practice a purer and more unworldly Christianity than was in existence in the towns. According to records that tell of a monk named Hilarion converting the people of Elousa in about 350 A.D., it would seem that Christianity was introduced into the Negeb only in the fourth century.

Sbeita was still pagan in 400, and a story which indicates this exists in a tenth- or eleventh-century manuscript in the library of the Greek Patriarchate in Jerusalem. It concerns the misfortunes of one, Theodulus, a disciple of St. Nilus, who was stolen by some raiding Sinaitic Arabs to serve as a sacrifice to the Morning Star. On the day of the sacrifice, however, the kidnappers overslept and the Star had faded before they arose, an accident which they took to be an omen against the sacrifice of Theodulus. They kept him for some time in their wanderings and, finally, put him up for sale in Sbeita,

announcing that he would be beheaded if he were not quickly sold. Under such incitement, Theodulus himself pleaded before the buyers for a new master saying, "... I prayed with both my hands those who came to the sale to pay what the barbarians asked, and not to be stingy over the price of human blood, assuring them that I would serve with zeal him who should buy me, and that even after I should have repaid what he spent for me.' Touched by his prayers, a townsman did buy him, to resell him later to the Bishop of Elousa . . . who freed him and restored him to S. Nilus."

As we have said, the beginnings of these Negeb towns are still shrouded in mystery, but it is fairly certain that Kurnub, Abda and Auja el Hafir began as Nabatean settlements on arterial caravan routes, and continued as military posts through the Roman period, even though Trajan deflected the main caravan route through Petra to Bostra. Kurnub and Abda became stations in the Roman frontier system, the Limes Palaestinae, and Auja may well have been kept as a small outpost far to the south of the Limes. Archaeological finds prove continued occupation there through the second, third and fourth centuries A.D., although on a small scale. Sbeita is in a different class of description. It seems to go back no further than about the second century A.D., and it is difficult to account for its beginnings as it was not on any caravan route and never appears to have been fortified. Furthermore, it has no spring or well; yet it seems to have possessed a large and prosperous population, who maintained three public baths. At Sbeita also was found one of the largest and handsomest churches.

Khalasa was the largest city of the Negeb and its beginnings possibly antedate Nabatean times. The small amount of exploration done there uncovered tombs which contained remains earlier than any found at the other sites, with the exception of Ain el Gudeirat. Khalasa, however, is in the most northerly end of the Negeb, very near Beersheba and quite close to the coastal plain which

FIGURE 7. SBEITA: VIEW LOOKING SOUTH FROM THE TOP OF THE CHURCH OF ST. GEORGE. IN THE FOREGROUND WAS A SMALL MONASTERY; THE OPEN SPACE AT THE LEFT WAS THE MONASTERY GARDEN. IN THE BACKGROUND MAY BE SEEN THE RUINS OF PRIVATE HOUSES AND OF ANOTHER CHURCH.





FIGURE 8. SBEITA: LOOKING NORTH FROM HOUSE RUINS IN THE CENTER OF TOWN TOWARD THE COMPARATIVELY WELL PRESERVED CHURCH AND MONASTERY OF ST. GEORGE. THE WINDING PATH IN THE FOREGROUND IS AN ANCIENT STREET PARTIALLY BLOCKED BY FALLEN MASONRY.

has been inhabited from time immemorial. It differs from the other towns under discussion in one respect. It reached its greatest size in the fourth century A.D., and then declined, while the others reached theirs in the sixth and seventh centuries. In many of the papyri found at Auja there are references to the "district of the City of Elousa," which seem to indicate that Khalasa was the capital of the district.

Water Conservation

One of the most interesting aspects of the region is the system of water conservation that was developed. Rainfall here measures not more than a few inches a year and is precipitated between the months of October and March. Today it suffices only to nourish the poorest kind of crop and a meagre population of 50,000 nomads. As yet we have not enough satisfactory evidence to suppose that during the first centuries of the Christian era the Negeb had a much larger rainfall, but we do know that there must have been at least 150,000 people living here in the midst of agricultural abundance.

As far as we know today, this was made possible solely by an intricate and ingenious system of water conservation which involved the most careful terracing of hillsides and valleys. These terraces prevented soil erosion while making possible the fullest utilization of what rainfall there was. On the more barren hillsides, where cultivation was not practicable, channels were cut, through which rainwater was carried to huge cisterns carved out of solid rock. One of these reservoirs in the valley of Gudeirat measures 125 by 125 by 10 feet, but this one was fed also by a perpetual spring about a mile and a half away. Vineyards were plentiful, and there is good cause to believe that pomegranates, peaches, almonds, olives, and figs may have been produced as well.

Within the towns this water conservation system was carefully maintained also. All private houses were equipped with cisterns; there were cisterns in connection with the churches, and in the streets and small squares; and at Sbeita there was an elaborate system of drains in the streets which conducted water to two large reservoirs in the center of the town. Besides these catchments, there were many wells—Auja had four—the construction of

FIGURE 9. THE CHURCH OF ST. GEORGE AT SBITA. THE FOREGROUND IS THE COLONNADED ENTRANCE COURT; IN ITS CENTER STANDS A DRUM WHICH ONCE SUPPORTED A LARGE BASIN FOR ABLUTIONS. BEHIND IS THE NARTHEX, OR PORCH OF THE CHURCH. BEHIND THAT, IN TURN, LIES THE BASILICA PROPER, DOMINATED BY ITS THREE APSES WHICH HAVE SOMEHOW SURVIVED THE PASSAGE OF TIME. TO THE RIGHT OF THE LATTER MAY BE SEEN THE APSE OF A SMALL CHAPEL, AND THE LARGER APSE OF THE BAPTISTRY.



which points to the Byzantine period; and some dams or barrages. At Kurnub, for instance, there is a series of three dams built in the river bed, the lowest of which is of truly great proportions, measuring some 75 feet across and rising to a height of 38 feet and being 20 feet thick.

Some day we shall know much more about the Wilderness of Zin. For the present, we may say that the people

were well protected, thrifty, and industrious. The substantial buildings and the evidence of delicacies imported from afar—the clam, mussel and scallop shells, fishbones, and stamped handles of wine and oil amphoras, found at Auja, for example, even indicate a fairly high level of prosperity. Life in this border country may have been pleasant and full; it could never have been dull.

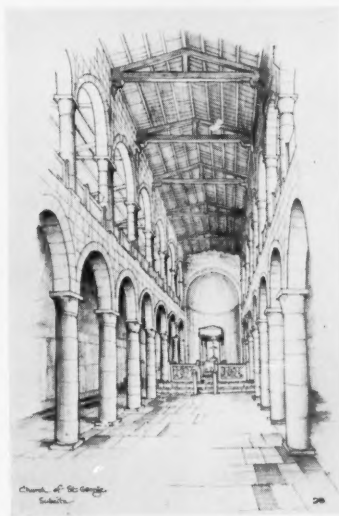


FIGURE 10. BASILICA OF ST. GEORGE. RECONSTRUCTION OF THE INTERIOR.



CLUNY

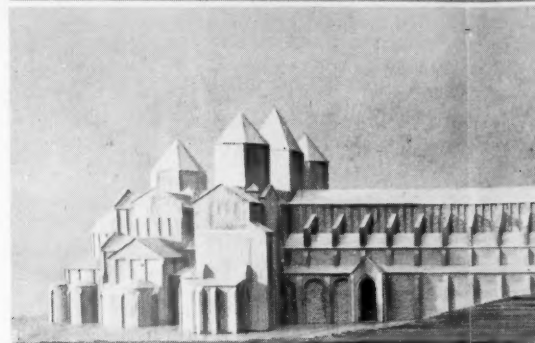
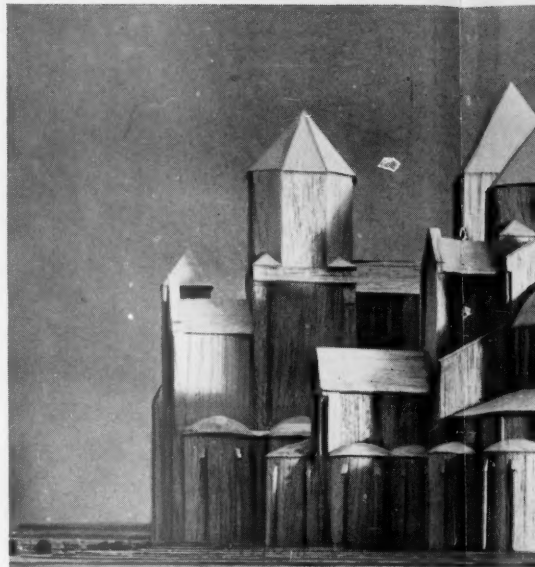
THE CENTER OF WESTERN MONASTICISM, IN THE ROMANESQUE PERIOD, WAS THE GREAT BENEDICTINE ABBEY AT CLUNY. HERE AROSE A SERIES OF SUBSTANTIAL CHURCHES AND A VAST COMPLEX OF MONASTERY BUILDINGS. IN THE COURSE OF SUCCESSIVE RECONSTRUCTIONS ALMOST ALL THE MEDIAEVAL CONVENTUAL BUILDINGS WERE REPLACED, WHILE THE MAJESTIC ABBEY CHURCH WAS DEMOLISHED AT THE TIME OF THE FRENCH REVOLUTION. ARCHAEOLOGICAL TECHNIQUES HAVE ACCORDINGLY BEEN NECESSARY TO RECOVER THE PLANS AND ELEVATIONS OF THE ABBEY BUILDINGS.

IN 1928, ON REPRESENTATIONS BY THE LATE AMBASSADOR HERRICK, THE FRENCH GOVERNMENT AUTHORIZED THE MEDIAEVAL ACADEMY OF AMERICA TO UNDERTAKE ARCHAEOLOGICAL EXCAVATIONS AT THE SITE. THE WORK, DIRECTED BY KENNETH J. CONANT, PROFESSOR OF THE HISTORY OF ARCHITECTURE AT HARVARD UNIVERSITY, YIELDED DATA FOR THE PAPER

RECONSTRUCTION OF THE TENTH- AND ELEVENTH-CENTURY MONASTERY AND PARTICULARLY OF THE SECOND CHURCH (c. 955—981 A.D.) AND THIRD OR GREAT CHURCH (1088—c. 1130 A.D.).

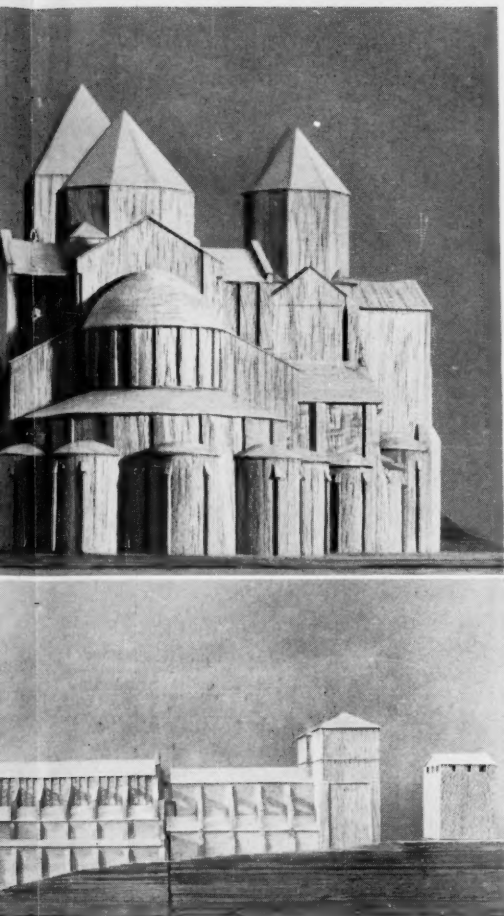
THE PICTURES ON THIS PAGE SHOW SOME OF THE BY-PRODUCTS. AT THE UPPER LEFT IS A PERSPECTIVE DRAWING OF THE THIRD CHURCH (LEFT) AND SECOND CHURCH (RIGHT) OF CLUNY, FROM THE WEST, AS THEY APPEARED ABOUT 1125. THE DRAWING IS BY PROFESSOR CONANT FROM MODELS MADE BY EDWARD WEREN, JOHN HOLABIRD, AND CARTER H. MANNY.

THE OTHER THREE PICTURES ARE OF A BALSA WOOD MODEL OF THE THIRD CHURCH. WITH THE MOST FULLY DEVELOPED PLAN, THE HIGHEST AND BOLDEST VAULT, AND THE MOST DIVERSE AND PROFUSE DECORATIONS IN ROMANESQUE ARCHITECTURE, THE THIRD CHURCH AT CLUNY WAS THE LARGEST OF ALL ROMANESQUE CHURCHES AND THE PREMIER CHURCH



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OF THE STYLE. THE PHOTOGRAPHS SHOW THE EAST END, WITH THE BOLD AND GRACEFUL APSE (ABOVE), THE VIEW FROM THE "NORTH," SHOWING THE APSE FROM ANOTHER ANGLE AND THE TREMENDOUS NAVE WITH ITS NARTHEX (ABOVE), AND AN OBLIQUE VIEW FROM ABOVE, LOOKING WEST ALONG THE RIDGE (RIGHT).

THIS MODEL, AT A SCALE OF 1 : 200, WAS MADE BY STELLE SOUTHARD HILBERRY, RESEARCH ASSISTANT OF THE MEDIAEVAL ACADEMY OF AMERICA, UNDER THE SUPERVISION OF PROFESSOR CONANT. OTHER INSTRUCTIONAL MATERIALS EXHIBITED AT THE FOGG ART MUSEUM, HARVARD UNIVERSITY, HAVE INCLUDED A FULL-SIZE REPLICA OF THE ARCADE OF THE APSE, INCORPORATING CASTS OF THE EIGHT FAMOUS CAPITALS FROM THE ARCADE, WHICH ARE PRESERVED IN THE LOCAL MUSEUM AT CLUNY; AND A MODEL OF THE SECOND CHURCH AND ELEVENTH-CENTURY MONASTERY, MADE OF TRANSPARENT PLASTICELLE TO SHOW THE PLAN UNDERNEATH. — K. J. C.

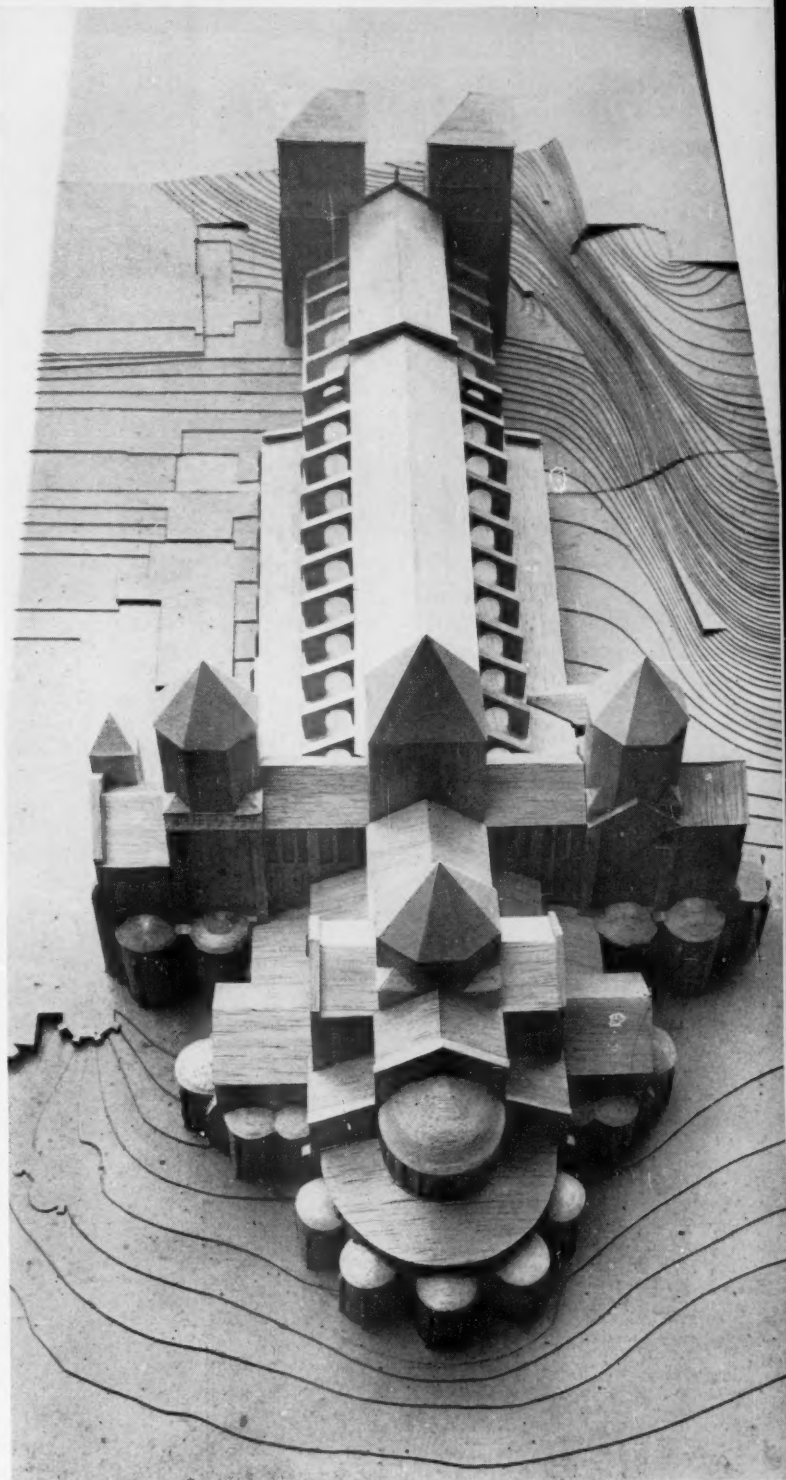




FIGURE 1. FOUNDATIONS OF AN APSIDAL (HAIRPIN-SHAPED) HOUSE AT OLYMPIA. ALTHOUGH THIS IS TO BE DATED IN THE GEOMETRIC AGE, BETWEEN 1100 AND 750 B.C., DOUBTLESS THE EARLY MINYAN (MIDDLE HELLADIC) HOUSE HAD A SIMILAR PLAN. SEE FIGURE 2. (J. P. H. PHOTO.)

In the twentieth century B. C., the first wave of Greek invaders swept down from the Danube valley into Hellas. Dr. Harland, Professor of Archaeology at the University of North Carolina, has excavated their settlements and devoted most of his professional career to their study. Here he sums up the present extent of our knowledge of the middle-bronze-age civilization of the Minyans.

LIFE IN A MINYAN VILLAGE

By J. Penrose Harland

ABOUT the time that Abraham and the Hebrews were migrating from Mesopotamia down into Palestine, the southern part of the Balkan peninsula was experiencing an invasion by a people from the north, an Indo-European people whom we may identify as the first of the Hellenes or Greeks to enter the land which they were destined to make famous.

Because the distinctive type of fine gray pottery which they introduced was first found at Boiotian Orchomenos, the legendary home of the people

the Greeks knew as Minyai, we may call this pottery "Gray Minyan" ware, and its makers the "Minyans." Gray Minyan pottery is found at digs in conjunction with the polychrome Kamares ware of Krete, which in turn has been found at several sites in Egypt in contexts dated in the time of the twelfth dynasty, ca. 2000-1800 B.C. The entrance of the Minyans upon the scene may accordingly be placed in the twentieth century B.C.

The Minyans found the new land inhabited by a non-Indo-European race akin to the peoples of

southwestern Asia Minor. That the invasion was not accomplished without a struggle is attested by the numerous settlements which were destroyed around the beginning of the twentieth century. Excavations at numerous sites show a layer of ash separating the remains of two distinctively different civilizations. The former inhabitants were not exterminated, but seem to have been assimilated. Thus a mixed culture must have resulted, in which the Hellenic strain was clearly dominant.

The Minyans spoke a dialect of Greek akin to Aiolic, which we may call "Arkadian," taking the name from the region where this dialect survived into the classical period. Embedded in the Greek language, however, we find many survivals from an older tongue, particularly words ending in *-nthos* or *-ssos*, names of places or objects, such as *Korinthos* 'Corinth,' *sminthos* 'mouse,' *Parnasos*, *kyparissos* 'cypress tree,' and other examples. We attribute these words to the earlier people who were absorbed by the Minyans.

Lack of evidence prevents us from visualizing the appearance of the invaders, but one may imagine them to have been a fairly tall race and it is possible that at least some of them were light-haired. In the Homeric epics one reads of the blond Achilles and others with "*xanthos*" hair. Did these blond warriors enter the scene of history now, or with a later invasion of Hellenic people? Or did the blond-haired folk come in with both waves of invaders from the north?

A word, before we get down to business, about chronological terms. As a result of their investigations, archaeologists have divided the "prehistoric" period in the Aegean area into the Neolithic (New Stone) Age and the Bronze Age. Metal—at first copper and then bronze, an alloy of copper and tin—appears to have come into use around 3000 B.C., a little before that date in Egypt and possibly a little later on the mainland of Greece. On the basis of ethnic and stylistic changes, the Bronze Age in the Aegean has been divided into Early, Middle, and Late periods, the dividing points being taken at the approximate dates 2000 and 1400 B.C. The Dorian Invasion (ca. 1150 B.C.), and the subsequent introduction of iron into general use, inaugurated the Iron Age.

Further, to differentiate and to localize the three civilizations which developed contemporaneously in the Aegean area, that of the Bronze Age on the islands (the Kyklades) has been called the

"Cycladic," that of Krete the "Minoan" (after the legendary King Minos of that island), and that of Hellas, the mainland of Greece, has been termed the "Helladic." Previous to SIR ARTHUR EVANS' excavations at Knossos in Krete, this mainland civilization was called "Mycenaean" after the site of Mykenai, where SCHLIEMANN'S excavations in 1876 revealed to the world the early civilization which is reflected in the Homeric epics. The term "Mycenaean" is still used by some to designate the "Heroic Age," particularly the Late Helladic period, after ca. 1400 B.C.

In this article, the "Minyan Age" is to be equated with the Middle Helladic period, ca. 2000–1400 B.C.

Dwelling-places

The Minyans seem to have introduced a new type of house into the land. The previous type, with flat roof and rectangular plan, is superseded by a curvilinear house, hairpin-shaped in plan and with a hooped roof, that is, a roof formed by bending over two rows of saplings, which form the side walls, and tying them together overhead (FIGS. 1 and 2). Perhaps they interlaced small branches and twigs in the rows of saplings and in time smeared wet clay over and in the twigs, thus producing the wattle-and-daub hut (FIG. 3).

In time, as they became more settled, a more permanent type of construction would evolve. The curved walls would be straightened and made parallel, and would be built of sun-dried brick resting on a raised base of stones. The stone foundation, projecting a foot or more above ground, would keep the dampness from undermining the brick made simply of dried clay. Incidentally, the Greek word for a brick, *plinthos*, betrays its pre-Hellenic origin. Then, too, the curving hooped roof would give way to a ridged roof with straight rafters running up to the ridge-pole. The curved or apsidal end seems to have survived awhile, but the apse was difficult to build and in time it gave way to a straight back to the building. Thus was developed the *megaron*, the oblong building with entrance at one short side or end of the structure, which came to form the main element of the Helladic or Mainland palace. The great Late Helladic ("Mycenaean") palaces, though ultimately descended from the northern type of house exemplified by those found in Troy II, are directly derived from the Minyan house.

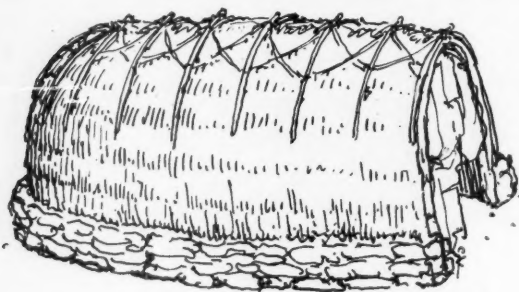


FIGURE 2. RECONSTRUCTION OF AN APSIDAL OR CURVILINEAR HOUSE SUCH AS MIGHT HAVE BEEN INTRODUCED BY THE MINYANS. BENT-OVER SAPPLINGS, ANCHORED IN THE STONE FOUNDATION AND TIED OVER THE CENTER, WOULD FORM A HOOP ROOF. BRANCHES AND TWIGS WERE INTERTWINED BETWEEN THESE SAPPLINGS AND PERHAPS CLAY WAS DAUBED OVER IT. IN TIME, THE CURVED END WAS SQUARED OFF AND A RIDGED ROOF REPLACED THE HOOP ROOF; THE TYPICAL MEGARON, THE OBLONG HOUSE, RESULTED. (RECONSTRUCTION BY DR. L. B. HOLLAND.)

The disposition of the rooms of the Minyan house was along the axis of the building, one behind the other, although in time additions would be made to the side. Rooms could be set off by walls of sun-dried brick or of wood or by curtains made of skins or cloth.

A regular feature of the northern type of house was the fixed hearth, situated in the main room of the house. At first this served both for heating and for cooking, though doubtless, as today, the baking would be done in outside ovens. The hearth would be raised several inches above the level of the floor and made of clay or of stones set in clay. How to get the smoke out of the house was a problem and it is questionable whether a satisfactory means of getting rid of it was ever devised. Possibly a hole was left at the top of each gable end of the building; but "Homer" speaks of the smoky and sooty ceiling beams or rafters, and perhaps it is best to assume that the Minyans too looked up at sooty rafters.

The floors of early houses are assumed to have been of beaten or tamped clay, such as are found at many sites.

The furniture must have been characterized by its scantiness, one might say by its absence. There may have been a simple framework of wood which served as bed, couch, and seat, although many may have slept on a level with the floor or at most on a raised bench of clay or stones. There may have been rude seats of wood although likely as not these early people squatted on the floor or sat on a log or tree trunk. One may doubt the existence of tables but there may well have been chests made of wood to hold the few extra clothes or coverings. There were undoubtedly coverlets or blankets, woven by the women, which were

either kept in chests or spread out on the bed or couch in the more imposing houses of the early Minyans.

The interior walls of the house may have shown the surface of the sun-dried bricks or the walls may have been covered with a coat of clay, applied in liquid form, or even by a whitewash. It is possible that the walls were decorated with the man's arms and hunting paraphernalia or trophies.

Pottery

A special branch of the furniture was the earthenware equipment or pottery, which would astonish the average modern by reason of its great variety in shape, size, and decoration. The excavator of a bronze-age site is struck by the array of vases and pots found in the ruins of a house; they range from the coarsest cooking-pot to the thin-walled jar, from the immense *pithos* or storage-jar to the delicate and tiny cup. There are vessels for water, wine, oil, and grain, cooking-vessels, shallow bowls, deep bowls, saucers, cups, ladles, even what may be called fruit-stands. What these people lacked in wooden furniture, they made up for in variety of ceramic ware.

The fine Gray Minyan ware was made of a well levigated clay which when fired took on a dark or a light gray color. These highly polished vases, with thin walls and angular shoulders and rim, seem to have been derived from metal prototypes. I have seen no reproduction which does justice to this excellent pottery.

In time, Gray Minyan gave way to a ware of similar shape and fabric but yellow in color, resulting from technical improvements in the kiln which raised the firing temperature. It is this

FIGURE 3. WATTLE-AND-DAUB HUT NEAR GRAVIA IN CENTRAL GREECE. NOTE AT THE END OF THE HUT THE SUN-DRIED BRICKS. THIS WAS THE MAIN BUILDING MATERIAL IN GREECE THROUGHOUT ITS HISTORY, THAT IS, FOR DWELLING HOUSES. NOT ONLY THROUGHOUT THE NEAR EAST TODAY BUT IN OUR OWN SOUTHWEST THIS "ADobe" CONSTRUCTION IS STILL IN USE. THE SUN-DRIED BRICK, BASED ON A LOW FOUNDATION OF STONE, WAS REINFORCED WITH VERTICAL AND HORIZONTAL BEAMS OF WOOD. THE WATTLE-AND-DAUB CONSTRUCTION PROBABLY ORIGINATED EARLIER THAN THE SUN-DRIED BRICK STYLE OF BUILDING. (PHOTOGRAPH BY DR. ELEANOR F. RAMBO.)



Yellow Minyan which, following contact with the Minoans of Krete, after ca. 1800 B.C., came to receive the dark-on-light decoration of the Minoans and thus illustrates the fusion of the Helladic and Minoan cultures. From then on, down into the sixth century B.C., the dark-on-light style of decoration prevailed in vase and other paintings. It must be emphasized that there is no question at all of a Minoan conquest of the mainland of Greece. The shape remains Helladic (or Minyan); only the form of decoration is derived from Krete, and that influence is to be explained by trade intercourse.

Another characteristic ware which we would find in the Minyan house is the matt-painted pottery which was largely used for domestic purposes, but there are some thin-walled pieces with miniature decoration which might pass also as works of art. About the time that Gray Minyan was giving way to Yellow Minyan, a polychrome matt-painted ware came into vogue, red being added to enhance the decoration. In the more pretentious houses, more probably in the later period of the Minyans (after 1600), one might also see vessels of copper or bronze.

While the domestic vessels and storage jars are usually found assembled in one room, some of these finer vases may well have been on exhibit when not in use. In addition, one might see terracotta figurines of deities, household gods they might be called; and small images, or venerated objects, of stone might be seen in a recess in the wall or placed elsewhere in the house. In any house, of any age, there would be loomweights and spindle whorls of terracotta, and out of doors, just as in Greece today, there would be women with the distaff, spinning, and also apparatus for

carding and skeining and weaving. Probably the loom would be indoors, though some weaving today is done out in the open.

Cloths and Clothes

This brings us to the subject of dress and here we have only indirect and for the most part late evidence. But since, among primitive peoples, customs and methods change slowly if at all, perhaps one may be justified in using the evidence concerning dress found in the *Iliad* and the *Odyssey*. In some opinions, these Homeric poems reflect substantially the civilization of the Late Helladic period, ca. 1400–1150 B.C., the period immediately following and, for the most part, continuing the Minyan or Middle Helladic civilization.

The dress of the Minyans was presumably very simple, consisting of a shirt-like undergarment and, worn over it, a sleeved cloak which reached almost to the knees. In winter a great cape or an oblong piece, similar to the himation of classical times, may have been worn. Sandals of leather, or worked oxhide, completed the attire. The woman's clothing was probably little different from the man's except that the dress would reach to the ankles. It is difficult to imagine, even this early, the absence of such jewelry as rings, bracelets, necklaces, and hair ornaments. In an early Middle Helladic grave at Zygouries, a string of rock-crystal beads accompanied the deceased, who, at the dig, was called "Queen Zyxie," but who in the formal report of the excavations became a mere numeral.

The material of clothing was doubtless wool. Of course, goat's hair and even skins of animals might also have been used, especially by the men

and for winter wraps. Though linen is mentioned several times in the Homeric poems, one may question its use before contact with Egypt or with Krete was established, in the eighteenth or seventeenth century. One must imagine colored garments, for no doubt the woolen cloth was dyed. The so-called purple murex, which yielded colors ranging from red to purple, has been found in heaps in Krete as early as the Middle Minoan II period, that is, as early as 1800 B.C.

It has been suggested that *merinthos*, the word for cord, string, or line, may have meant flax. At any rate, here is another non-Hellenic—or pre-Hellenic—word which had been taken over by the Hellenes early enough to appear in the *Iliad*.

Husbandry

The daily life of the Minyans must have been largely taken up with the all-important, all-absorbing activity of providing food for the family and



FIGURE 4. APHIDNAL, A "MINYAN" SITE IN ATTICA, FROM THE SOUTH. (PHOTOGRAPH BY J. P. H., 1921.)

livestock. Hellas, by the very nature of the land, has always been a poor country and man has had to work hard to extract a living from the soil.

There is evidence that wheat, barley, and millet were grown back in the Bronze Age, the better land being sown with wheat. As for vegetables, our Minyans probably raised onions and leeks, beans, peas, lentils, and kinds of vetch. Possibly acorns formed part of their diet. Certainly they had been eaten by the previous population, to judge by the pots of acorns found in houses at Nemea. Incidentally, several Greek names for fact that the names for 'cucumber' and 'pump-vegetables, plants, and fruits are of pre-Hellenic origin, for instance *erebinthos* 'chick-pea.' The

kin' are non-Hellenic may be of some significance.

In an orchard, but growing wild, one might see the apple, pear, the fig, and pomegranate. The word for the wild fig, *olynthos*, betrays by its form its non-Hellenic origin. Of great importance to these early people was the olive tree, for it produced not only a food but also a cooking-oil, fuel for lamps, and also, probably this early, the soap for the people. In each house would be found simple oil lamps, as well as storage jars of olive oil. Each house may have had its own olive press nearby, or in some localities there may have been communal presses, or one man might have rented the use of his press to his neighbors, in exchange for a share of the yield.

Since there is no evidence that the vine was brought to Hellas from elsewhere, it may be assumed to have been indigenous, and hence would have played a prominent part in the economy of the Minyans. It would seem that the "Mediterranean triad," the grain, grape, and olive, formed the main staples in the diet of these early peoples as well as in the classical period.

Bee-keeping is another occupation which we may with reason associate with the early peoples in Hellas. This would satisfy the need for sweets—sugar was not known—and also provide beeswax. Honey is mentioned in both the *Iliad* and the *Odyssey*. One may add that there were medicinal and aromatic plants, probably wild, and also such edible seeds as poppy and sesame. Salt, so necessary to man and cattle, was probably obtained from sea water.

Though one would hardly credit the flower garden to the Minyan household, there were wild flowers throughout the land, just as today. The traveler in Greece knows what a paradise this land is for the botanist and horticulturist. The lily was probably indigenous, but the tulip and rose, though mentioned early, may have been later imports. Other flowers mentioned in the epic poems are the crocus, violet (?), and hyacinth. The *-nthos* ending of the latter betrays its pre-Hellenic origin, as does *narcissus*.

The women probably worked in the fields, plowing, breaking up the clods, sowing, reaping, just as is the practice in the modern Greek countryside. H. J. ROSE has attributed this custom, not to the laziness of the men, but rather to the fact that agriculture was early associated with magic; it

FIGURE 5. THE SOLE SURVIVING COLUMN OF THE TEMPLE OF APHRODITE ON THE ISLAND OF AEGINA MARKS THE SITE OF AN EXTENSIVE MINYAN OR MIDDLE HELLADIC SETTLEMENT AS WELL AS SETTLEMENTS OF THE EARLY AND LATE HELLADIC PERIODS. THE VIEW IS TOWARD THE WEST; BEYOND THE ISLAND OF ANGISTRI (ANCIENT PITYONNESOS) MAY BE SEEN THE MOUNTAINS OF THE PELOPONNESOS. (J. P. H. PHOTO.)



was the women who bore children and they alone would know how to make the earth bear the crops. Also, it would be the women who would be seen at home making flour, by grinding the grain on a saddle quern with a stone grinder; and, of course, the baking in the outdoor oven would be managed by the women.

Another occupation of every landholder was the care of livestock. Cattle, sheep, goats, and pigs were raised for what they produced as much as for meat. It is doubtful if cattle would be slain for meat unless on the occasion of sacrifice, and we may be sure that the common man rarely offered up so important a member of his family.

The ox was the chief beast of burden, for plowing and transport. The oxhide would ultimately be put to good use but it is doubtful if the ox was slain just for this product. Cows furnished not only milk but cheese made from the milk, and it appears from the Homeric poems that cheese was a common dish on the daily menu. Sheep and goats were kept for the wool and goat's hair, although the lambs and kids might be killed for meat.

The donkey was doubtless used as much as today for transport of man and burdens. The horse does not appear in Greece until around 1600 B.C. This animal, the "mountain-ass" of the Babylonians, which was first domesticated in Central Asia, did not reach Krete until the Late Minoan period, in the sixteenth century; the horse appears on the Shaft Grave stelai at Mykenai close to 1600 B.C. The writer found the skull of a horse in a context at Nemea which may not be dated later than the fifteenth century. The mule was another beast of burden and draft animal. It is mentioned numerous times in the epic poems. In one passage, it is called the "mountain-(animal)."

The goose seems to have been the only kind of fowl which would be seen around the house, although the dove, duck, crane, heron, swan, and other birds are mentioned by "Homer." The chicken was a late-comer to Hellas, introduced probably in the seventh century B. C.

Hunting should be mentioned in any enumeration of the activities of the men of the Bronze Age. Though man had ceased to be primarily a hunter after he had settled down to an agricultural life, he still continued to hunt. Since hunting had as its aim for most men the getting of meat, one would hardly class hunting as a sport. Among the animals hunted were the wild boar, deer, wild goat or ibex, wolf, and rabbits. Ducks and the other birds, mentioned above, would also be game for the hunter. The Minyan hunter probably had a hunting hound or two, and, armed with a spear or javelin and a long knife, or sometimes with bow and arrows, would go out for game as often as occasion demanded or circumstances permitted. There would be a watchdog around the house, but no cat; the latter did not arrive in Greece until the sixth century B.C.

Fishing was another activity engaged in by our Middle Helladic man, although it might better be labelled as a diversion. Fish would be as common a food for the man of Chios as it was infrequent if not strange in the inland home of the Arkadian. But certainly fishing and fish receive a good deal of attention in the Homeric poems. Men fished with line and with net, with sinkers or weights of lead or stone. The Fisherman Vase, found at Phylakopi in Melos, which may be dated before 1600 B.C., shows us men walking along a beach each carrying a fish in either hand.

Besides fish, other creatures of the sea were sought after and eaten, such as oysters, crabs, sea



FIGURE 6. THE SITE OF ASINE ON THE SOUTH COAST OF THE ARGOLID. A SWEDISH EXPEDITION, IN WHICH CROWN PRINCE GUSTAVUS ADOLFUS TOOK PART, BROUGHT TO LIGHT AN IMPORTANT MIDDLE HELLADIC TOWN WITH INTERESTING FINDS. REMAINS OF THE BRONZE AGE SETTLEMENT MAY BE SEEN TO THE RIGHT OF THE LITTLE CHURCH AND BELOW THE AKROPOLIS. A REMARKABLY FINE BEACH EXTENDS FOR A MILE FROM BELOW TO THE RIGHT, THUS MAKING ASINE ONE OF THE FINEST SITES FOR EXCAVATORS IN GREECE. ASINE IS MENTIONED IN HOMER'S "CATALOGUE OF SHIPS" (*Iliad*, 2.560) AS ONE OF THE CITIES WHICH CONTRIBUTED TO THE CONTINGENT OF EIGHTY SHIPS LED BY DIOMEDES OF ARGOS IN THE TROJAN WAR. (J. P. H. PHOTO.)

urchins, mussels, and octopodia. We have already mentioned the industry in murex, a kind of shellfish which secretes a red or purple dye.

The making of this dye probably came to be a specialized industry, the work of one man and his family in a locality. The occupations previously mentioned were for the most part those of every man, carried out in every individual's home, that is, farming, raising livestock and other domesticated animals, making flour and baking bread, making cheese, keeping bees, spinning and weaving, and gathering olives and pressing them for oil; and we may include here, since the results ended up at the individual home, hunting and fishing.

Trade and Industry

However, some skills were developed which took time to master. A long apprenticeship of son working with the father must have become necessary for the working of metal. At first every man may have struggled by himself with the tenacious material in order to create usable tools. But it was soon found that this was a skill for the specialist, and gradually the skilled artisan or craftsman makes his appearance in the land and ultimately in every large community. Probably the people came to associate a certain magical power or talent with the craftsman and this skill remained in the possession of the family, to be passed on down from father to son. The importance of the metal worker in the Bronze Age is indicated by the term applied to this craftsman even after iron had come into general use; the village smith was still called *Chalkeus* 'Bronze-worker.'

In the larger villages, it is possible that the dyer and the potter were specialists who gave up farming and other food-obtaining pursuits in order to have time to fill all the orders brought to them. The worker in precious metals would find sufficient employment at the court of a noble or king. Other trades may have followed, such as leather-working. Thus we may trace the rise of independent industry, apart from the occupations carried out at the individual homes. This brings about the beginning of trade, whereby the smith makes a mattock in return for so much wheat flour or olive oil.

The storekeeper and huckster has not appeared. In the first place, there was no coinage in the Bronze Age, in the middle of which the Minyans made their appearance; without this convenient medium, trading as an independent calling could hardly exist. It seems as if the ox was the unit of value when two parties were conducting a trade; so many bushels of grain, for example, or a fine inlaid sword, would be reckoned as equal in value to an ox. In time we find in Krete an ingot of metal moulded in the shape of a stretched oxhide. So trade there was, in our Minyan village, but it did not exist as a livelihood for an individual. Many centuries were to elapse before true coinage was invented.

Just as the specialist arose in industry, so we find the bard and the seer developing professions which necessitated, or shall we say permitted, their abstention from the manual labor which occupied their neighbors. According to the Homeric poems, the profession of bard was an old one, and the same is true of the seer. But the rise of the independent bard and seer postulates the

FIGURE 7. THE "ASPIS" AT ARGOS. ON THIS SHIELD-SHAPED HILL—WHENCE ITS NAME—HAVE BEEN FOUND THE REMAINS OF SETTLEMENTS DATING FROM THE EARLY BRONZE AGE (ABOUT 3000-2000 B.C.) ON INTO ROMAN TIMES. AN IMPORTANT MIDDLE HEL-LADIC SITE IS ALSO TO BE ASSOCIATED WITH ARGOS.

IN THE DISTANCE, ABOUT SEVEN MILES AWAY, IS THE SANCTUARY OF HERA, THE ARGIVE HERAEON, WHERE THE ACHÆAN CHIEFTAINS ARE REPUTED TO HAVE MET AND SWORN ALLEGIANCE TO AGAMEMNON BEFORE SETTING OUT FOR TROY. LATER TRADITION TRANSFERRED AGAMEMNON'S CAPITAL FROM MYKENAI TO ARGOS. SO IN THE *Agamemnon* OF AISCHYLOS THE COMMANDER OF THE FORCES AGAINST TROY IS AT HOME AT ARGOS. (J. P. H. PHOTO.)



rise of wealthy nobles and of kings. Such a condition of society seems to have existed among the Minyans of the time of the Shaft Grave Dynasty at Mykenai, but a visit to a typical Minyan village of the twentieth or nineteenth century B.C. would have found the bard or seer able to give only spare time to this agreeable avocation.

The same may be said of the village healer who was to become the physician of the classical period. While some people always would have recourse to the magician of the tribe, shaman or medicine-man, a body of common-sense medical lore would ultimately develop among a people and become the common property of all. In time some old woman or some man would come to be looked upon as a reliable doctor and a rude though often efficacious system of therapeutics would develop. Physicians are mentioned in the *Iliad*, but that would seem to reflect a more advanced state of society than we may be justified in claiming for the Minyans.

One occupation which might be mentioned is that of shipbuilder. Though many foreign imports on the mainland may be credited to the coming of ships with wares from Egypt, Krete, and the Eastern Mediterranean, it is only reasonable to suppose that the Minyans themselves early turned to the sea. As often pointed out, the sea is a highway, not a barrier, and the island in the distance would lure the adventurous and the curious to row or sail over to investigate.

We must remember that the building of the "Argo" and the Voyage of the Argonauts in quest of the Golden Fleece was associated with the Minyai and with Minyan Iolkos; and this was dated by the ancient Hellenes even before the Tro-

jan War. Then, too, the colonization of the distant island of Cyprus by the Arkadian-tongued Minyans from the mainland, as early as 1400 B.C., presupposes a long period of shipbuilding and seafaring.

One by-product of overseas trade developed into a lucrative calling: piracy. This was quite a respectable profession; after all, pirates stole from foreigners. And so it was not considered an insult to be asked if one were a pirate. "Strangers, who are you?" asks Nestor of Telemachos. "Whence do you come over the watery ways? On some trading enterprise or on adventure, just as pirates, do you wander over the sea. . . .?"

Minyan Society

So far we have been discussing the Minyan as an individual. But it is obvious that, regardless of how primitive, or, better, how simple life is, there must be some form of government and laws in every community. It is probable that early there was not what we call personal property in relation to land. The clan possessed a tract of land and each family had its own farm, and olive grove, and vineyard. The pasture-land may have been common to the clan and each family may have had the right to graze its animals on a portion of it. As the growing population crowded the land, disputes must have arisen, and soon judges would have had to be appointed, for in time the chieftain or king could not, or would not, take on the much too frequent obligation to settle disputes.

We may deduce from the great wealth found in the Shaft Graves at Mykenai, those royal

burials of a Minyan dynasty ruling from ca. 1700 to 1500 B.C., that the Minyans had kings. Since in an early stage of civilization conservatism is the rule and few radical changes come about, we may use the *Iliad* to throw light upon the government and society of the early Minyans. Probably we are justified in assuming a rule by a king who was *primus inter pares*, a king who chairmanned a group of associate kings and who assembled around him the elders of the tribe or community. Doubtless the different kings varied in ability and power; one would be strong enough to concentrate great wealth in the hands of the royal household, another might become a mere figurehead. But we may assume that a limited monarchy was the form of government in the Minyan Age.

In addition to the council of elders, there would develop a popular assembly made up of men of suitable age and capable of bearing arms. The number of officers required to conduct the duties of government would depend on the size of the kingdom or tribe. The king may have been called *basileus* this early; this term is non-Hellenic and, to judge by the Homeric poems, pre-Dorian, that is, it was introduced before the last wave of invaders, about 1150 B.C., whom we know as the Dorians. It survived down into classical times, for example at Sparta and Argos, to mention two notable states. It survived even in non-monarchical Athens in the title of a religious official, the Archon Basileus.

The *basileus* combined the offices of civil governor, commander in war, and earthly representative of the divinity. As such, he was also judge, or chief justice among several judges. The laws, which were in reality the accepted customs of the state or tribe, were believed to have been given by the gods to the king.

Worship

As to Minyan religion, we must have recourse to later evidence; but among people recently emerged from a nomadic or migratory existence, changes in religious beliefs are apt to be trivial or at most additional. We may therefore reconstruct something of the beliefs and ritual of the Minyans from later analogies in archaeology and the epic poems.

On the basis of such evidence, we may assume that the religion of the Minyans was polytheistic

and anthropomorphic: many gods, all thought of as in the image of Man. All primitive peoples worship a fertility god and an earth-mother goddess, and, completing the triad, the son by their union, the vegetation, thought of as a youth. Foremost among all Hellenic peoples was the great sky- and heaven-god whom they called Zeus. Though he came to be thought of as the king of the gods, the hurler of the lightning bolt and the sender of rain, he was after all primarily the fertility god who with the earth-mother brought about the continuance of the human race, the livestock, and the annual appearance of the crops.

As for his consort, whether she was known in the Minyan period as the mother or earth-mother (which is the translation of *Demeter*), or whether each locality had a special name for her, is indeterminate. The Hera of the Argolid, the district containing such famous states as Mykenai, Tiryns and Argos, eventually won out over Dione, Danae, Alkmene, and a host of others who were local earth-mother goddesses. They came to be identified with the wife of Zeus and in certain localities retained leading positions; others, such as Athena and Aphrodite, lost their original character and came to preside over other interests.

As yet there was no statue of the deity and so no temple-building was needed to house it. There was doubtless some sacred tree or stone or other object which became charged with the spirit of the deity when invoked. The various sanctuaries or holy places were out in the open, at most surrounded by a hedge or fence or stone wall. In the house there were probably figurines of the deities who were close to the family and could be counted upon—it was hoped—to look after the welfare of the household.

From the fact that personal objects and vessels with food were placed in the graves, we know that these early Minyans believed in an after life; but what they thought this life was like, we do not know. Probably they had merely vague ideas about a life beyond, a colorless existence of the kind indicated in the *Odyssey*, in which Achilles is made to say that he would prefer being a laborer on the poorest farm to being king over the dead.

In discussing a civilization, its art should be mentioned, but for the earliest Minyans we have little evidence for any but the art of the potter. Perhaps we are to visualize decoration on objects which have not been discovered, or on materials

such as wood and cloth which have perished. At the peak of Minyan civilization, however, we have the amazing wealth and artistry of the contents of the six Shaft Graves at Mykenai. The thousands of objects of gold, silver, bronze, terracotta, stone, semi-precious stones, wood, shell, amber, and other materials elicit admiration from all who have seen them. Special mention must be made of the bronze daggers inlaid cunningly with gold, silver, and black niello. The life and movement depicted on these daggers, masterpieces not merely of Hellenic art but of the art of all time, make the beholder agree with H. R. HALL, that veritably these people could paint with metal.

There is no evidence of writing among the Minyans. It is hard to conceive of a people carrying on so extensive a commerce in gold, amber, ivory, and other exotic products, with outsiders, and particularly with Egypt and Krete, both of which had established systems of writing, without being able to write themselves; but nothing more than potters' marks has been found.

Social Life

The life of the Minyan has been pictured as austere, one of unremitting toil and duty. However, man became industrious through necessity, and, human nature being essentially the same in all ages, man is ever ready to relax when the necessity disappears, even momentarily. We may safely assume that the normal Minyan left his work when circumstances permitted. We must also bear in mind the close connection between religious functions and social entertainment. To the Hellenes of all periods the holy day has been a holiday. Our Minyan villager may not have had a day of rest every seven days but, scattered through the year, were easily fifty days on which he could claim a holiday because of some religious function.

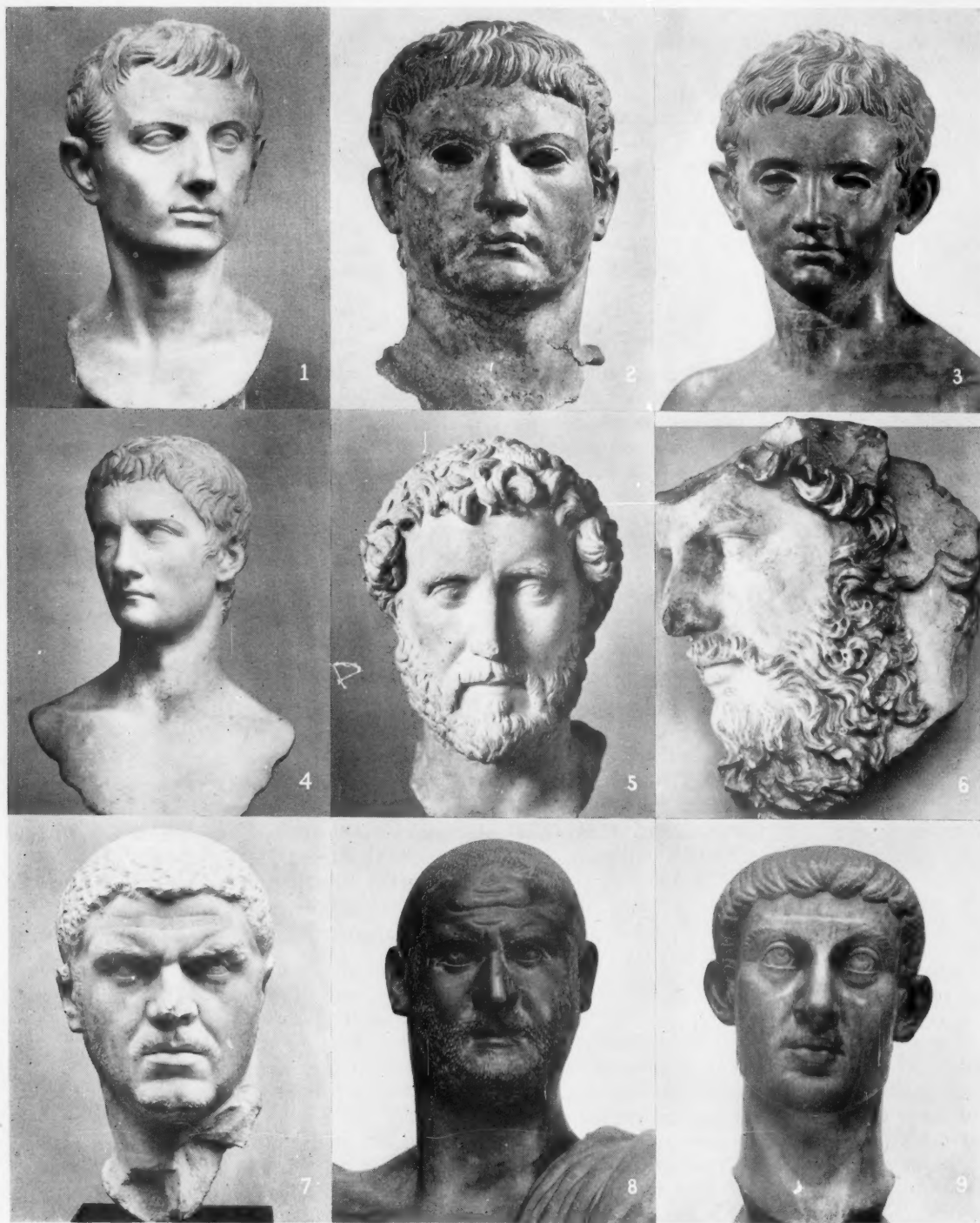
There were the birth of a child, the coming of age of his neighbor's son, the marriage of a relative, the death of a friend with the funeral games, and the numerous festivals and sacred days associated with the gods. There were happy as well as "brave men before Agamemnon"; our Minyan may not have found life all beer and skittles, but he probably did not allow himself to become a sullen slave to physical needs and duties.



FIGURE 8. THE SHAFT GRAVES AT MYKENAI. ENCIRCLED BY THE DOUBLE RING-WALL OF UPRIGHT SLABS WERE THE GRAVES OF THE RULING HOUSE AT MYKENAI IN THE PERIOD BETWEEN 1700 AND 1500 B.C. FIVE WERE DISCOVERED BY SCHLIEMANN IN 1876 AND A SIXTH SUBSEQUENTLY BY STAMATAKIS. THE SEVERAL THOUSAND OBJECTS OF GOLD FOUND IN THESE GRAVES SHOWED THAT HOMER WAS JUSTIFIED IN CALLING MYKENAI "RICH IN GOLD." OBJECTS OF SILVER, BRONZE, VARIOUS STONES, CLAY, SHELL, AMBER, ETC., WERE ALSO FOUND ACCOMPANYING THE NINETEEN BODIES BURIED HERE. NOTABLE AMONG THESE FINDS ARE THE BRONZE DAGGERS INLAID WITH GOLD, SILVER, AND BLACK NIELLO, WHICH DISPLAY A REMARKABLY HIGH DEGREE OF ARTISTIC SKILL. (J. P. H. PHOTO.)

The Minyan seems to have been a humane and peaceful fellow. After taking the land from the "Indians" of his day—always a justifiable act from the point of view of the conqueror—the Minyan seems to have lived a peaceful life. There was no need of walled towns and no indication of warfare; no concentration camps, nor murder of non-combatants.

On the whole, the writer of this pro-Minyan article, if offered the choice of living in the twentieth century B.C. or the twentieth century A.D., would be inclined to say, "I'll choose the former and live with the more civilized Minyans. Of course, I want to take along with me some books, chocolate, and Crane's plumbing, and it is to be understood that I am to be exempt from all manual labor on any farm. The final condition is that I am to be appointed for the duration the bard of the village—but who would listen to me, playing a musical instrument?"



Can You Identify These Celebrated Romans?

(Key on page 114)

An erstwhile comparative physical anthropologist, now gaily—and successfully—operating an ancestral saw and grist mill in New Hampshire, recalls some of his experiences on the frontiers of archaeology.

THE MAN ABOUT THE BONES

By George Woodbury

THE social standing and to some extent the nature of my profession were well exemplified by the variety of names—or epithets—that were attached to it. They formed a wide range, starting from “ghoul” and progressing upwards through “body snatcher,” “resurrection man,” “inverted mortician,” and, finally, “Research in Osseous Physical Anthropology.” But in violation of the academic tradition that one should never say in two syllables what one knows how to say in six, I was generally referred to as “The Man About the Bones.”

The human skeleton is well defined as a man with his insides out and his outsides off, and it was this armature upon which the physical man is wound that was my province. Strictly speaking I was an anthropologist, which is to say a zoologist or naturalist whose preoccupation is with Man rather than some other animal. It was a highly specialized specialty and as such was not crowded with fellow workers. In fact, prior to World War II there were three of us professionally engaged as full time “bone men” in the continental United States. Since this event I do not think there are any.

Student Days

My introduction to this curious profession took place while I was a student in the somewhat prophetic atmosphere of the old anatomy school in Edinburgh, although I do not think it had too direct a bearing. For it was the same anatomy school that, a century before, had been the retail outlet for the infamous BURKE and HARE. Human dissection was then illegal, and the cadavers for anatomy students were bought, boot-

leg, from professional body snatchers. It was the era of JERRY CRUNCHER, and others less fictional. There were two, BURKE and his partner HARE, who were particularly successful in securing such specimens and for a long time kept the anatomy school well supplied with bodies. They would come to the back door at night and dump their ghastly burden on the floor. The anatomy Master, who was a great social figure in the Edinburgh of the time as well as considered the best anatomist in Great Britain, would look it over to see if it were fresh enough (they always were), pay cash, and ask no questions.

One morning one of the students, getting ready for the day's work, uncovered the latest arrival on the dissecting table. He instantly recognized—and with what unspeakable horror!—the naked and beautiful body of JEANNIE McDONALD, a young prostitute whom he had visited the night before. BURKE and HARE were more than mere body snatchers; they were, perhaps, the most sordid murderers a callous world has ever seen. The trial and punishment shook Victorian England to its refined bootstraps and resulted in the Anatomy Act which legalized human dissection and abolished body snatching for ever. LORD MACAULEY, then at the height of his career, introduced the bill.

Later, I studied in the great skeleton collections in the University of Vienna and affiliated museums. For two hundred years the Austrian state had collected such materials. Literally thousands of documented skulls and skeletons had been brought back by travelers and explorers from all corners of the world. There are numerically larger collections in this country, but few more representative of the great variety of physical

Man, Seljuk Turk, Borneo Head Hunters, Aztec Indian, Hottentot, Eskimo, Boer, Samoyed, and Roman soldiers were all represented, collected from accidental finds, battlefields or cemeteries. Unless one is familiar with burial practice in Europe it may be well to point out the contrast with our own. There a body is buried in the consecrated churchyard, but for a season only. The space is rented for ten, twenty, or forty years, not bought in perpetuity. Space is strictly limited and there are always more coming. The gravedigger scene in *Hamlet* is a case in point, for where land is scarce the dead are not allowed to encumber it to the detriment of the living. When finally exhumed the bones are thrown out and destroyed, or, as in the "Beinhaus" at Halstatt in Upper Austria, collected in an ossuary. The "Beinhaus" has an added feature, however, that is singular in this respect. For a consideration paid by the next of kin, the skull of so-and-so may be not only permanently preserved on a shelf in the crypt but neatly decorated with name and address, interesting particulars regarding the deceased, or mottoes, or even handpainted with flowers attractively designed.

Oftentimes in the cranial collections it was evident how the individual met his or her end. Battle victims are frequently thus marked and often spoiled for the student of comparative human anatomy. Skulls, which had formerly been collected by head hunters, especially those of the East Indies, were often damaged. Understandable under the circumstances, if one considers that the collector stalks his potential specimen through the jungle, axe in hand, waiting his moment. It must be distracting, the thought that another connoisseur may be just behind you with the same idea in mind. So it is not very wonderful that there are frequent evidences of a failure to follow through with the final decapitating swing, or a slight slice off into the rough.

While excavating for a building on the outskirts of Vienna a quantity of human bones was uncovered. The professor of anthropology and his students, I among them, adjourned to the scene and spent several days exhuming them. It proved to be one of the burial pits on the battlefield of Wagram. There, huddled in indescribable confusion in a common grave, lay the bodies of hundreds of both sides who had fallen in that great victory. It was interesting to observe the shatter-

ing effect of a flintlock musket ball; it must have been almost like being hit with half a high-velocity brick. But for all our anatomical knowledge, the only way we could identify Napoleonic Dragoon from Austrian Grenadier was by the trouser buttons.

*"But everybody said," quoth he,
"That 'twas a famous victory."*

So much for anthropology, perhaps, but so much for political ideologies, too.

Another time we were asked to superintend the exhumation of the tombs of crusaders in the crypt of a mediaeval chapel. We were astonished to discover how short-statured these well-born paladins of the twelfth century were. Hardly up to an average of five feet, and these presumably were considerably taller than their base-born contemporaries. But even if they were short, they made up for it in muscularity. The points of muscle attachment form rough areas on the bone, and the more a muscle is developed the greater the extent and rugosity of the area. These battered warriors must have been, in life, upholstered to the point of being overstuffed. Considering all the hardware they habitually wore they would have to be. There were few who had lived to be more than forty-five years of age and most of them bore definite evidence of having met a violent death. Life must have been short, dangerous, and uncomfortable.

But the evidences of recuperative power shown in these skeletons were phenomenal. Hardly one but bore at least two great dents and slashes in his skull that showed signs of having healed. Usually there would be several great osseous scars and one unhealed—that one was the "terminal event." Considering the assortment of tools employed in knightly combat, axe, broadsword, mace, and morning star, it is only surprising that any one survived even the initial encounter.

Most of the head injuries had been inflicted on the left side, showing that, then as now, most people were right-handed. For a right-handed man would tend to hit the left side of his opponent's head.

Bone Hunters

In practice, my principal business was in conjunction with archaeologists. They were eternally uncovering the cemeteries of peoples whose civili-

zation had been long forgotten, and it often fell to my lot to excavate the bones. The archaeologist reconstructs the civilization from evidence of their material culture: house forms, trinkets, pottery, etc. My work was analysing the collateral evidence of the bodies of the people themselves; in other words, trying to identify them by means of their stature, distinguishing physical characteristics, racial affinities, in fact by anything recorded on the bones which might assist in completing the picture of who these people were.

Sometimes, when for example a road-building operation threatened the complete destruction of an Indian burial mound or early cemetery, I would be sent to the spot to excavate and salvage what specimens and information I could before it was too late. It was interesting work and highly diversified. In addition to exhaustive knowledge of bones of all kinds, human and otherwise, it required considerable knowledge of the archaeology and geology of the region; some physical stamina, for the locations were almost always in the back woods, somewhere; and the digestive powers of a cassowary. One ate what one could find and when, during such operations. Most of all it required some finesse in handling workmen who were unfamiliar with exhuming skeletons, and almost always prejudiced against it. I remember a group with which I worked in Florida.

A little of Florida's warm winter sun filtered through the dense foliage of chinaberry and palmetto hung with ragged moss to illuminate the small clearing and the group that stood around it. I stood on one side of Big Charlie as he worked, and twenty-five of Big Charlie's fellows leaned on their hoes or shovels, on the other side. We were running what we thought was a Surruque Indian burial mound and Big Charlie had been elected to begin. He was the biggest and blackest of them all, and the most afraid. His shining face dripped with sweat, more from fear than from the exertion of swinging the heavy grub hoe in his hands. Just behind him another negro shoveled the trench clear of dislodged sand. Inadvertently he pushed a little too close.

"Gimme room, big boy! Gimme room!" said Charlie, turning on him like a cat. "Maybe I wanta git outta here an' go places fast." His face was a study in tense and polished ebony.

Deeper and deeper ran the trench toward the

center of the low elevation. Nothing but sand and more sand showed up. Charlie worked with the reluctant enthusiasm of one whose last fifty cents was spent, and with the easy motion of generations back of him who had labored at another's bidding. He, and all the others, knew that this was a burial ground and soon we would uncover human skeletons. He was muttering to himself and I stepped closer to listen. In time to the swing of his grub hoe he was chanting softly to himself

*"Ah hope . . . ah don' find . . . them bones . . .
Ah hope . . . ah don' find . . . them bones . . ."*

"Owe-e-e! Lawd God A'mighty. Here them." He stood transfixed, his eyes popping out; a naked yellow skull had rolled out almost against his foot.

I picked it up carefully and shook the sand out of it. All the others gathered around in a ring to look bug-eyed at the specimen. After a few minutes handling and talking about it I passed it around. Charlie was first and he handled it like an ostrich egg that had been filled with nitroglycerine. This was the introduction. Familiarity so rounded off the edges of their terror that before the excavation was completed, and some five hundred skeletons documented and removed, the presence of the dead was robbed of all its superstitious fear, and a more skillful or more interested crew of workmen never handled spade.

Human bones are constantly being found; sometimes under curious circumstances, and sometimes with even stranger results. During the Middle Ages, someone excavating for a house in the city of Milan in Italy uncovered two human skeletons which had been painted red. The parish priest called into consultation in the matter hesitated only a short while before identifying them as the mortal remains of St. Damion and St. Barnabas, I think they were, a brace of early Christian martyrs who had rated top billing at some long-forgotten Roman holiday. Over them was promptly erected a chapel, which still remains. Bone men of the present time are not so sure of the identification, however, for it is now known that it was customary at the end of the late stone age to daub the skeletons of their distinguished dead with red ochre before interment. It may well be that two stone-age men have been puzzling for the past thousand years at their strange surroundings.

Skeletal remains of the earliest forms of Man are excessively rare, and because of the insight that they give into the course of human evolution they are greatly prized by the scientific world. Usually they are unearthed by accident and immediately reported to those with knowledge to preserve the evidence. Often they are destroyed through ignorance. Sometimes they are discovered with deliberate intent by professional excavators of such things. There is one recorded instance of a stone-age skeleton, discovered on an English farm. Scientists were called at once to brood over this example of early Man as it still lay, half uncovered, in the ground where it had lain these past thirty or forty thousand years. But Learning ran into an unexpected stumbling-block. The owner of the land, an English squire of the old school, stubbornly refused to let it be exhumed unless the written permission of the next of kin was forthcoming. It was carefully covered over again with an appropriate marker, and only after some years of due process of law was it finally removed to the Royal College of Surgeons.

Years ago, around about the turn of the eighteenth century, two brothers lived in adjoining houses on Beacon Hill in Boston. They were successful and respected merchants, but because of some misunderstanding hated each other with all the cordial enthusiasm that too often characterizes the crusty New Englander. For thirty years neither spoke to the other, even though they lived only the thickness of a course of bricks apart and saw each other every day.

In the fulness of time they lived their lives and died. The family tombs were side by side in Boston Common and thither they went to their eternal rest, still side by side, and still not speaking. Only the rest was not quite so eternal as expected. When, some years later, the Boston subway was built, it happened to run directly under these fraternal graves. The tunneling was rather shallow and some overenthusiastic workman planted a charge of dynamite a little heavier than necessary. The bottoms of both tombs were blown out, depositing the bones of both brothers in one heap on the tunnel floor. The next of kin was duly found and intrusted with the delicate task of unshuffling these emblems of mortality into the pile of bones that belonged to Jonathan and those that were David's. There are several hundred bones in the human frame and the task was

difficult. It finally resulted in a necessarily more or less arbitrary reconstruction of two skeletons, but no one knows to this day whether Jonathan got back into his own tomb or David's, or whether the skeleton now labeled David's may not be in part at least the framework of his brother. If a physical resurrection of the body ever comes to pass in a literal sense, it seems likely that Boston Common may be the scene of wild excitement.

Workmen excavating for a new warehouse in Peiraeus, the port of Athens, came upon a number of human bones which had been remarkably well preserved in the sand of what had once been a beach. Since I happened to be in Athens at the time I was called in to examine them in company with members of the university medical school. They were not especially old as such things go in Greece, but it was not the antiquity that attracted attention. In each instance the skeletons were found with a bronze band like a staple surrounding the neck, forearms, and shins. With them were evidences of heavy wooden timbers. Research into the matter by a student of Greek history discovered that it was the custom of the Athenians in the third century B.C. to crucify pirates and expose their bodies by the sea as a deterrent to other mariners who might be tempted to indulge in the practice. They were stapled, not nailed or lashed into position. Crucifixion was a common practice long before the time of Christ and the exposure of the bodies of felons usual up until comparatively recent times.

A curious thing was found a few years ago in a sand dune on the ocean side of Long Island, within a few miles of New York. It was a human skull, encased in a wrought-iron framework like a basket which had a chain for suspension fastened to its top. Again it was found that here in the eighteenth century pirates were hung in chains, gibbeted, as warning to others.

Middlebury Murders

Perhaps the most singular, and certainly the most immediate in its connotations, of all the tasks that came my way as a practicing "man about the bones," was the case of the "Middlebury Murders." There are many who could tell the circumstances surrounding the story better and in more authoritative detail than I. I only came into the matter in the role of authority on the

skeletons themselves. The balance of the incident I shall have to repeat, like Herodotus, without responsibility for accuracy of detail, and merely as it was told to me.

A few years ago a group of children went out to pick blueberries in the woods near Middlebury, Vermont. They followed a long-abandoned 'tote road far up into the woods, remote from any habitation. One of them, going a little distance from the road, where the blueberries were thickest, happened to overturn a rock with his foot. Only, it was not a rock, but a weatherbeaten human skull that looked up at him. The children, panic-stricken and hysterical, summoned others to the spot, and soon the matter was in the hands of the state authorities, who found three complete skeletons, which had never been buried, lying fully exposed among the twigs and fallen leaves beside the abandoned logging road. Near them were the remains of a feather pillow, part of a striped canvas awning with its galvanized pulleys still attached, and the badly decomposed remains of what looked like an automobile robe. Nothing more. There was no trace of clothing of any kind, not even boot heels or buttons which are almost indestructible. All three had been shot once through the head with a .38 caliber pistol, which must have proved instantly fatal. The conclusion reached was that these three had been deliberately murdered some ten years before, and their bodies taken up this lonely road and left naked to the elements. The question who they were was naturally foremost in the mind of all. Since this sort of thing was in my line, the skeletons were turned over to me for examination. At least I might be able to determine some facts about their appearance in life that would lead to their identification.

The principal conclusions, which were beyond guesswork, should have been enough to identify anybody. The bones included those of a woman, aged 45 within a year or two, of medium stature (we were able to compute it to a plus or minus inch). She was rather slightly built, and if not a Jewess racially had most of the salient physical characteristics of that stock. The dental repair work on her teeth showed clearly that while she must have been in somewhat poor economic circumstances as a young woman, late in life she must have enjoyed a certain measure of prosperity. The earlier work was poorly done, but the later

excellent in quality and workmanship. Furthermore, the teeth bore some traces of that curious mottling, like tortoise shell, which is caused by fluorine in the drinking water and is common to only certain areas in the southern and western United States.

The two other skeletons were those of adolescent children. One was a boy of fourteen with, of all things, an orthodontal brace upon his teeth. These braces require tightening at regular intervals, and he must have been on some dentist's books as a patient who never returned. I doubt if there is a practising dentist in New England who has not seen this specimen at one or another meeting of the profession, for the state of Vermont exhausted every opportunity to find out who they were.

The third skeleton was that of a twelve-year-old girl. There was an eroded area on her forehead which might have been caused by a chronic sore or injury in life and should have made her conspicuous. It was almost certain from a similar dental malformation that distinguished all three of them, and which is known to be hereditary, that these were the bodies of a mother and her two half-grown children. No trace of any soft tissue remained, with one small exception. On the boy's skull there was a small patch, no bigger than a postage stamp. A week of patient work cleaned this bit of scalp, and straightened and mounted under a microscope the half-dozen hairs that clung to it. Not only that but the hairs were stood upright and sectioned, so that they could be examined end on, so to speak. It bore out the Jewish-like indications previously observed, for the hair was dark, coarse, and wavy.

In spite of this wealth of identification data, the actual identity of this family, as far as my knowledge goes, was never established, and far less the identity of their murderer.

Such was the work-a-day world of the Man About the Bones: a sort of comparative mechanic of the human chassis, and by the same token a connoisseur of all kinds of bones. From them he is sometimes able to piece out a little more of the human story of which they were once a vital part. But he is always bound to be a dealer in tentative conclusions, a teller of stories which are seldom quite complete; perhaps no good story ever goes to its ultimate and final detail.

SNAKE DANCES

By Lillian B. Lawler



WE READ MUCH THESE DAYS OF RELIGIOUS SECTS THE MEMBERS OF WHICH HANDLE POISONOUS SNAKES. SNAKE-HANDLING IN RELIGIOUS RITUALS IS A VERY ANCIENT PRACTICE. ON THE ISLAND OF CRETE, AS LONG AGO AS THE SECOND MILLENNIUM BEFORE CHRIST, AND PROBABLY EVEN EARLIER, SNAKE-HANDLING SEEMS TO HAVE BEEN PRACTICED BY WOMEN VOTARIES OR PRIESTESSES OF THE GREAT NATURE GODDESS OF THE CRETANS, TO WHOM THE SNAKE WAS SACRED. THE STATUETTE SHOWN HERE, IN THE CANDIA MUSEUM, IS ONE OF SEVERAL FOUND BY SIR ARTHUR EVANS IN THE RUINS OF THE PALACE AT CNOSSUS, IN NORTHERN CRETE. SOME OBSERVERS BELIEVE THAT IT REPRESENTS THE GODDESS HERSELF; BUT MOST WRITERS SEE IN IT A WORSHIPPER OF THE GODDESS. PERSONS WHO HAVE WITNESSED MODERN SNAKE-HANDLING RITUALS USUALLY COMMENT ON THE FIXED, HYPNOTIC STARE WHICH CHARACTERIZES THE FACES OF THE WORSHIPERS. ALTHOUGH ALLOWANCE MUST BE MADE FOR PRIMITIVE TECHNIQUE IN THE CRETAN FIGURE, YET THE FACE DOES SUGGEST JUST SUCH A STATE OF ECSTASY. SNAKE-HANDLING RITUALS ARE ALMOST ALWAYS ACCOMPANIED WITH SHOUTS OR HYMNS, AND WITH A SHUFFLING SORT OF DANCE. USUALLY SNAKE-HANDLING IS FOUND AMONG PRIMITIVE OR UNEDUCATED PEOPLES. IN CRETE THE EARLY PRACTICE SEEMS TO HAVE BECOME FIXED IN CULT RITUAL, AND PRESERVED, PROBABLY THROUGH THE AGENCY OF SPECIAL PRIESTESSES, DOWN INTO THE ERA OF HIGH CIVILIZATION.

Miss Lawler is Associate Professor of Latin at Hunter College, New York, President of the Classical Association of the Atlantic States, Editor of CLASSICAL OUTLOOK, and a ranking authority on ancient and primitive dances.



Munich 2344

THE GREEKS, ALSO, KNEW AND SOMETIMES PRACTICED THE SNAKE-HANDLING DANCE. IT WAS FOUND PARTICULARLY IN THE FRENZIED WORSHIP OF THE VEGETATION GOD DIONYSUS, WHICH WAS BROUGHT INTO GREECE IN THE PREHISTORIC PERIOD, FROM LANDS TO THE NORTH AND EAST. SOME OF THE PARTICIPANTS IN THE DANCES IN HONOR OF DIONYSUS SEEM TO HAVE GARBED THEMSELVES TO REPRESENT THE MYTHOLOGICAL MAENADS, OR FEMALE ATTENDANTS OF DIONYSUS, AND SATYRS OR SILENES, BEAST-MEN, FOLLOWERS OF THE GOD. ON DIONYSIAC VASES IT IS OFTEN DIFFICULT TO DETERMINE WHETHER THE GREEK ARTIST IS PORTRAYING REAL DANCERS OR MYTHOLOGICAL PERSONAGES. SOMETIMES THE DIONYSIAC DANCERS CARRIED THE SNAKES CASUALLY (ABOVE); SOMETIMES THEY THRUST THEM AT THEIR COMPANIONS (ABOVE, RIGHT); FREQUENTLY, IN DANCES OF PARTICULAR FRENZY, THEY TORE THE LIVING SNAKES APART. IN LATER TIMES, THE SNAKE-HANDLING DANCES MAY HAVE BEEN PERFORMED WITH "DUMMY" SNAKES.

THE FINE VASE SHOWN HERE (RIGHT), DATING FROM THE FIFTH CENTURY B.C., PORTRAYS WOMEN DANCERS ENGAGED IN A FRENZIED SNAKE-HANDLING DANCE. SUCH WILD RITUALS WERE MORE COMMON IN THE NORTHERN DISTRICTS OF THRACE AND MACEDONIA THAN IN GREECE PROPER; AND THE COSTUME OF THE FIGURE AT THE EXTREME RIGHT IS SUGGESTIVE OF THRACE. OLYMPIAS, MOTHER OF ALEXANDER THE GREAT, AND QUEEN OF MACEDONIA, IS SAID TO HAVE BEEN PARTICULARLY FOND OF SUCH DANCES, AND TO HAVE KEPT PET SNAKES FOR USE IN THEM. THE DANCES WERE USUALLY, THOUGH NOT ALWAYS, ASSOCIATED WITH THE WORSHIP OF DIONYSUS OR A SIMILAR DIVINITY. HOWEVER, THERE WERE "SNAKE MYSTERIES," APPARENTLY WITH SNAKE-HANDLING, IN HONOR OF THE GODDESS ATHENA, ON THE ACROPOLIS AT ATHENS, DOWN TO A LATE PERIOD; AND THE CHRISTIAN ST. CYPRIAN SPEAKS OF HAVING BEEN INITIATED INTO THESE "MYSTERIES" AT THE AGE OF TEN.



Munich 332



Museo Civico, Bologna



Courtesy Metropolitan Museum of Art.

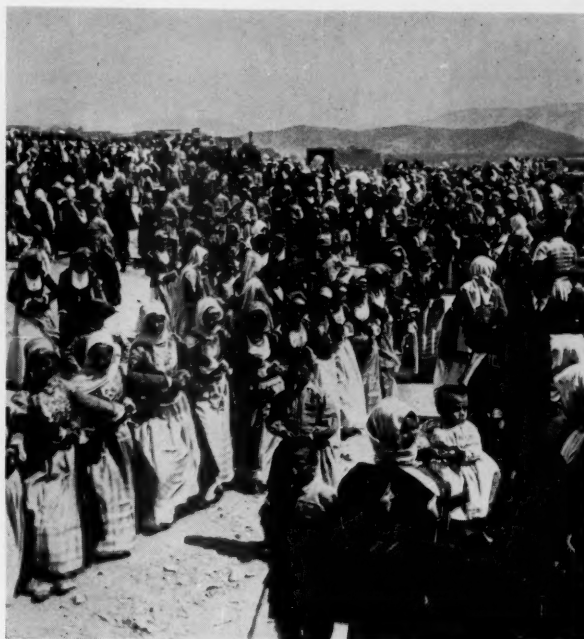
AN ENTIRELY DIFFERENT TYPE OF SNAKE DANCE IS ONE IN WHICH THE DANCERS, IN A LONG LINE, IMITATE THE CRAWLING OF A SERPENT. OF THIS SORT WAS THE FUNERAL DANCE OF THE HOMERIC PERIOD. IN IT, MOURNERS "CRAWLED" (THE GREEK WORD USED IN THIS CONNECTION IMPLIES A COMPARISON WITH A SNAKE) AROUND THE BIER OR THE TOMB, BEATING THEIR BREASTS, TEARING THEIR HAIR, AND UTTERING LOUD LAMENTATIONS. A LINE OF ARMED MEN AND CHARIOTS ALSO "CRAWLED" AROUND THE BIER. IT WAS BELIEVED THAT THE SOUL OF THE DEAD MAN PASSED INTO THE FORM OF A SNAKE; AND WHEN A SNAKE WAS SEEN NEAR A TOMB IT WAS FED AND HONORED. THIS GREAT DIPYLON URN, IN THE METROPOLITAN MUSEUM, DEPICTS FUNERARY DANCES. TO THE LEFT OF THE HANDLE, ADJACENT TO THE FRIEZE OF DANCERS, IS SEEN A WINDING SNAKE DESIGN. SUCH DESIGNS ARE SELDOM PURELY DECORATIVE, BUT RATHER ARE SYMBOLICAL. THE FRET AT THE TOP OF THE VASE AND THE CHEVRON DESIGN ON THE STEM ARE ALSO, IN ALL PROBABILITY, CONVENTIONALIZED SNAKE PATTERNS.

ANOTHER TYPE OF SNAKE DANCE IS ONE IN WHICH A LINE OF DANCERS, STANDING SIDE BY SIDE, CARRIES, IN A SINUOUS, WINDING PATH, A REPLICA OF A HUGE SNAKE—PARTICULARLY IN THE WORSHIP OF A DIVINITY BELIEVED TO APPEAR ON EARTH IN THE FORM OF A SERPENT. SUCH DIVINITIES ARE FOUND IN INDIA, SIAM, AND AFRICA TODAY, AND WERE KNOWN IN ANCIENT EGYPT, GREECE, AND CRETE. THE VERY OLD DANCE KNOWN AS THE *geranos*, PERFORMED ON THE ISLAND OF DELOS, BELONGS TO THIS GROUP. SUCH SNAKE-CARRYING DANCES OFTEN BECOME GARLAND-CARRYING DANCES; THEN, SOMETIMES, ROPE-CARRYING DANCES; AND, FINALLY, DANCES IN WHICH THE DANCERS' HANDS ARE ENMESHED IN FRONT OF THE BODY. THIS SCENE, FROM A GREEK TOMB IN RUVO, AND HERE REPRODUCED FROM R. ROCHETTE, *Peintures antiques inédites*, PLATE XV, PORTRAYS A DANCE OF THIS NATURE. A VASE FOUND IN VULCI, THE "POLLEDRARA HYDRIA," DEPICTS A SIMILAR DANCE, WITH THE PERFORMERS CARRYING A THICK, ROPELIKE OBJECT.



DANCES WITH ENMESHED HANDS, AND WITH SNAKE-LIKE TWISTING, WINDING CHOREOGRAPHY, HAVE PERSISTED IN GREECE AND ITALY FROM REMOTE ANTIQUITY TO THE PRESENT DAY. A FINE EXAMPLE IS THE *tratta* OF THE WOMEN OF MODERN MEGARA, PERFORMED ON EASTER MONDAY. DANCES OF THIS TYPE OFTEN SIGNALIZE JOY OR VICTORY. "OUR OWN FOOTBALL "SNAKE DANCE" MAY BE A DESCENDANT OF THE OLD GREEK SNAKE-LIKE DANCE.

ALL OVER THE MEDITERRANEAN REGION, AND LATER IN NORTHERN EUROPE AS WELL, THERE ARE STORIES OF SNAKE-KILLING GODS OR HEROES OR SAINTS. APOLLO, HERACLES, AND ST. GEORGE ARE OF THIS GROUP. FREQUENTLY IN ANTIQUITY A SNAKE-KILLING HERO WAS HONORED WITH A DANCE-DRAMA IN WHICH THE STRUGGLE WITH THE GREAT SERPENT WAS ENACTED. THIS MIMETIC PERFORMANCE GIVES US ANOTHER TYPE OF ANCIENT SNAKE DANCE. AMONG THE GREEKS IT WAS A FEATURE OF THE FESTIVAL KNOWN AS THE SEPTERION, PARTICULARLY AT DELPHI. IT MUST HAVE BEEN USED ALSO IN THE CULT OF HERACLES. ON A BLACK-FIGURED CYLIX, OR LARGE, SHALLOW CUP (BELOW), FOUND IN TARCHINIA AND NOW IN THE MUSEUM OF CORNETO, THERE IS PORTRAYED THE STRUGGLE OF HERACLES WITH THE OLD MAN OF THE SEA, PART MAN AND PART SERPENT. THE GREEK PAINTING GIVES US SOME IDEA OF HOW DANCES OF THIS TYPE MAY HAVE LOOKED, AS PRODUCED AT A FESTIVAL. THE DANCERS CIRCLING AROUND THE RIM OF THE CUP ARE MEN IN WOMEN'S DRESS, AND ARE PROBABLY INITIATES INTO THE "MYSTERIES" OF HERACLES.



Underwood-Stratton.



NEWS

Athens School Director

CARL W. BLEGEN of the University of Cincinnati, the excavator of Korakou, Zygouries, Nemea, Mycenae, Prosymna, Troy, and Pylos, has been appointed director of the American School of Classical Studies at Athens for the year 1948-1949. Professor BLEGEN served a previous term as acting director in 1926-1927.

JOHN L. CASKEY, also of the University of Cincinnati, will go out to Athens with Professor BLEGEN as assistant director.

Rome Fellows

The trustees of the American Academy in Rome have announced the appointment of the following fellows in the School of Classical Studies of the Academy, for 1948-1949:

Research Fellowships:

ARTHUR E. GORDON, University of California at Berkeley

DOROTHY M. ROBATHAN, Wellesley College

Senior Fellowship:

LAWRENCE RICHARDSON, JR., Yale University

Junior Fellowships:

BERTRAM BERMAN, University of Cincinnati

MYRA L. UHLFELDER, Bryn Mawr College

BPAS

The Philadelphia Anthropological Society began in January the publication of a monthly mimeographed *Bulletin*, edited by DOROTHY C. DONATH of the University Museum. Volume I, No. 1, contains an imprimatur by SAM (UEL NOAH) KRAMER, president of the society, an advance digest of a lecture on "Culturology" by LESLIE A. WHITE, resumes of the AAA meeting at Albuquerque by LOREN C. EISELEY and of the AIA meeting at New Haven by J. LAWRENCE ANGEL, brief communications from W. M. KROGMAN, ELEANOR

M. MOORE, and others, local news items, officers, and a list of the society's 133 members. There are many good ideas in this paper; the editors welcome a valuable new competitor and wish it a long and active life.

Before this new publication could be reported to the readers of *ARCHAEOLOGY*, the second, third and fourth numbers of the *BPAS* had appeared.

Tepehuan

One item in the *BPAS* calls for further comment. A 500-word statement records the departure of J. ALDEN MASON, curator of the American section of the University Museum, editor of the *American Anthropologist*, and an associate editor of *ARCHAEOLOGY*, for western Mexico, where he was to spend two months studying the customs and language of the southern group of the Tepehuan Indians, and the archaeology of the region. This model for all future announcements tells where the Tepehuan live, how Dr. MASON was to travel to reach them, why they are of interest to anthropologists, something of the background of Tepehuan studies and Dr. MASON's own acquaintance with them, and the recording equipment which he was taking into

the field—all matters concerning which, in normal editorial experience, it is impossible to induce archaeologists to testify.

D. M. R.

The University of Mississippi announced on March 1 the appointment, as professor of classics and archaeology, of DAVID M. ROBINSON, who retired from the Vickers professorship of archaeology and epigraphy at The Johns Hopkins University in 1946.

Professor ROBINSON, as excavator of Sardis, Corinth, Pisidian Antioch, and the splendid Macedonian site of Olynthus, editor, lecturer, author of 30 books and innumerable articles, and sponsor of over 70 Ph.D.'s in archaeology at Johns Hopkins, needs no further introduction to Mississippi or the readers of *ARCHAEOLOGY*, and we wish him every success.

SAH

CARROLL L. V. MEEKS, of Yale University's School of Fine Arts, has supplied us with the following brief account of the Society of Architectural Historians, of which he is now president:

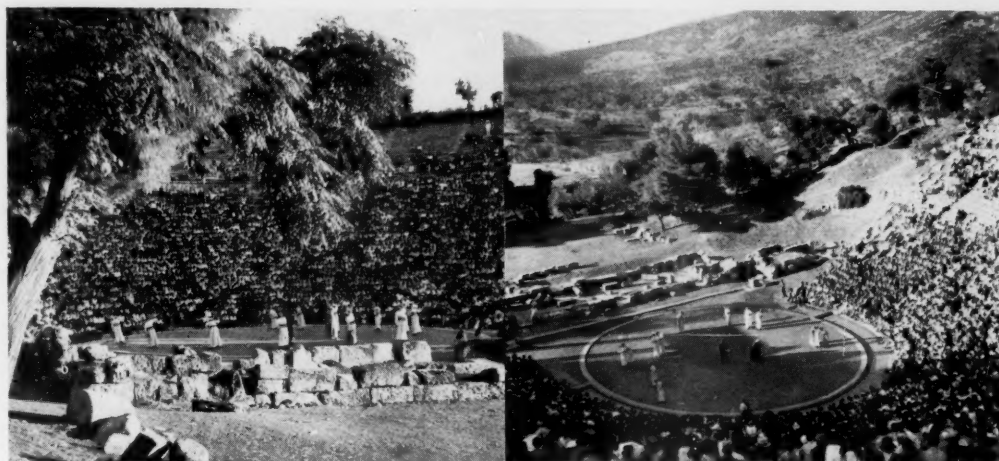
"The Society grew out of the Har-

ROMAN PORTRAITS IN NEW YORK

The Roman portraits reproduced on page 104 are prized possessions among the priceless collections of the Metropolitan Museum of Art, New York. For the pictures themselves, and permission to reproduce them here, ARCHAEOLOGY is indebted to DR. GISELA M. A. RICHTER, the Museum's Curator of Greek and Roman Art.

Here are the identifications (numbers are Metropolitan Museum accession numbers):

1. AUGUSTUS, EMPEROR, 30 B.C.—A.D. 14, AS A YOUNG MAN (ABOUT 30 B.C.). MARBLE. 19.192.40.
2. AGRIPPA (63—12 B.C.), OR SO SOME SCHOLARS BELIEVE. BRONZE. 14.130.2.
3. PERHAPS GAIUS CAESAR (20 B.C.—A.D. 4) OR LUCIUS CAESAR (17 B.C.—A.D. 2). BRONZE. 14.130.1.
4. CALIGULA, EMPEROR, A.D. 37—41. MARBLE. 14.37.
5. ANTONINUS PIUS, EMPEROR, A.D. 138—161. MARBLE. 33.11.3.
6. LUCIUS VERUS, EMPEROR, A.D. 161—169. MARBLE. 13.227.1.
7. CARACALLA, EMPEROR, A.D. 211—217. MARBLE. 40.11.1.
8. TREBONIANUS GALLUS, EMPEROR, A.D. 251—253. BRONZE. G. R. 487.
9. CONSTANTINE, EMPEROR, A.D. 306—337. MARBLE. 26.229.



AESCHYLUS' "PERSIANS" AT EPIDAUROS

IN SEPTEMBER, 1947, THE FRENCH SCHOOL AT ATHENS CELEBRATED ITS CENTENARY WITH AN EXTENSIVE PROGRAM OF ACADEMIC SESSIONS, EXCURSIONS TO EPIDAUROS AND DELOS, RECEPTIONS, AND DRAMATIC PERFORMANCES. ABOUT ONE HUNDRED DELEGATES FROM FIFTEEN COUNTRIES ATTENDED. THE ANCIENT DRAMA SOCIETY OF THE SORBONNE, WHICH HAD COME TO GREECE ESPECIALLY FOR THE OCCASION, PERFORMED THE "AGAMEMNON" AND "PERSIANS" OF AESCHYLUS IN THE ODEION OF HERODES ATTICUS AT ATHENS AND IN THE ANCIENT THEATRE AT EPIDAUROS.

THE TWO PHOTOGRAPHS REPRODUCED ABOVE SHOW THE THEATER AT EPIDAUROS, WITH ITS ORIGINAL ORCHESTRA CIRCLE COMPLETE, AND THE CAST AND AUDIENCE, DURING THE PRESENTATION OF THE "PERSIANS" ON THE AFTERNOON OF SEPTEMBER 14, 1947.

vard University Summer School. A group of students, working with KENNETH CONANT, dreamed it up. The active leader was TURPIN BANISTER, then a professor at Rensselaer Polytechnic, now Dean of the School of Fine Arts of Alabama Polytechnic at Auburn, Alabama. In 1941 TURPIN began the publication of the *Journal of the American Society of Architectural Historians*, which he carried on single-handed until 1945. He did all the editorial work and his wife gave her services in typing and cutting stencils.

"In January, 1947, the Society was incorporated in Connecticut and its name was changed to The Society of Architectural Historians. The word 'American' was dropped since we were the only society of architectural historians in the world. If a similar society is started elsewhere they will have to call themselves the European Society or the Asiatic Society or some-

thing. We are in very poor shape financially. Our dues are not sufficient to meet the costs of printing. We splurged on two printed issues, thus using up our reserves, and are going back to the mimeograph form which we can afford. We are also continuing a campaign to raise larger grants from institutions. At present Yale, the Association of Collegiate

Schools of Architecture, and the American Institute of Architects are our only regular supporters. . . . We are corresponding members of the Georgian Group of London, and of the Chinese Society for Architectural Research. We are also a constituent society of the National Council for the Preservation of Historic Sites and Buildings."

Colt Grants

The Colt Archaeological Institute will consider during 1948 applications for grants totaling not more than five hundred dollars to one or more projects which promise to further archaeological studies. Grants may be made for such purposes as travel, purchase of photographs or drawings, loans of technical equipment, or other expenses incidental to research or publication.

Applications, stating in precise terms the scope of the project, the expenditures which it is proposed to make from any sum granted, the amount requested, and the professional qualifications of the applicant, may be addressed at any time to H. DUNSCOMBE COLT, President, Colt Archaeological Institute, Room 2500, 63 Wall Street, New York 5, N. Y.

ARCHAEOLOGICAL INSTITUTE OF AMERICA • VICE-PRESIDENTS, 1948

GISELA M. A. RICHTER, retiring President of the New York Society. Miss Richter's most recent book is the best summary in print for general readers about Greek vases, *i.e.*, Greek drawing. Miss Richter is the First Vice-President of the Institute.

WILLIAM SCOTT FERGUSON, the Dean of American historians of Greece, has made abundant use of archaeology in his lifelong study of a millennium of Athenian history.

HETTY GOLDMAN, excavator of Eutresis, Colophon, and St. Paul's city, Tarsus, has the first of her volumes on Tarsus in press, and, having recovered from serious illness, is back at her desk in Princeton.

CHESTER C. MCCOWN has himself represented the Pacific Coast in Middle Eastern archaeology. To this profession he has also given a son, who is now in Iran.

MRS. WILLIAM T. SEMPLE represents the classical interest manifest in such excavations as Troy and Pylos; as well as in her own community, Cincinnati, its schools, and its university.

MRS. GERTRUDE SLAUGHTER has ably guided for many years the Society at Madison. Her own good sense and discrimination are known to all who know that Society.

GEORGE R. THROOP is the grand figure of the St. Louis Society, which has honored the Institute by the invitation for the Fiftieth General Meeting.

PAUL A. F. WALTER is a man of eminence in many fields. His most recent service has been to create an easy and even a prosperous transition between one regime and another in Santa Fe.

CLARENCE WARD, former General Secretary of the Institute, and one of its most popular lecturers, is now a pillar of the revived Oberlin Society. Like his own university, the Institute is happy to honor him in this year.

MRS. JOHN J. WHITEHEAD, JR. has assisted the cause of archaeology by thoughtful acts too numerous and varied to record here; her own active management of the Institute's largest Society, that of New York, continues to add to its great prestige and to exemplify the excellence of its taste.

THOMAS WHITEMORE recently left for his nineteenth consecutive season of work in Santa Sophia, Constantinople. The Institute honors him not only for his magnificent work in the greatest church of Eastern Christendom, but also for his self-sacrificing acts in preserving monuments, already excavated and published by others, and quite outside the church itself.

Peru

Our special correspondent in Peru reports as follows:

"**M. HENRI REICHLIN**, of the French Mission and formerly of the Trocadero, who has previously done excavations in the province of Santiago del Estero, in Argentina, is currently excavating a series of city-sites in Cajamarca, which have never before been excavated. . . . The National Museum, founded by **TELLO**, is carrying on limited and rather unsatisfactory excavations . . . in Ancon, as part of an agreement between the government and the museum to allow excavation to precede urbanization projects in sites of archaeological significance. . . . The best archaeology [in 1947] was turned in by **Dr. GORDON WILLEY** of the Smithsonian, who made an extensive survey of the entire valley to determine the shift in residence pat-

tern and the probable interrelation between this, the development of irrigation techniques, and other factors.

"**Dr. JAMES FORD**, of the AMNH [American Museum of Natural History, New York—Ed.], also did some fine work on surveying the whole valley, sampling surface collections, to establish a means of dating the sites from the surface finds. He worked exclusively with utility ware. His work in combination with **WILLEY**'s will probably give a rather good picture of the development of the valley from the pre-ceramic, non-agricultural phase through the various phases of agriculture to irrigation, large scale, to incorporation of the valley within a large political structure. **STRONG**, **EVANS**, **COLLIER**, and **BENNETT** were digging for stratigraphy and particular evidence to establish or expand the definition of certain periods or horizons. **Dr. JUNIUS BIRD**, AMNH, was the last

archaeologist down here and worked particularly on shell-heaps on the north coast to establish the sequence from pre-ceramic to ceramic. He got very good evidence for the development of weaving. . . ."

Kensington Stone

Minnesota's controversial "Kensington Stone" has been deposited with the Smithsonian Institution for safe-keeping and public exhibition, according to an announcement made on March 11.

The Kensington Stone is said to have been found near Kensington, Minnesota, by a farmer named **OLOF OHMAN**, in 1898. It measures 31 x 16 x 6 inches, and weighs 200 pounds. It bears a text in Runic characters, which has been translated as follows:

"We are eight Goths and twenty-two Norwegians on an exploration journey from Vineland through the west. We had camp by two

skerries one day's journey north from this stone. We were out and fished one day. After we came home we found ten of our men red with blood and dead. AVM (Ave Maria?). Save us from evil. We have ten of our party by the sea to look after our ships fourteen days' journey from this island. Year 1362."

Naturally such a text, antedating—and in Minnesota!—the voyage of Columbus by 130 years, would not be accepted as authentic without prolonged scrutiny. On display until recently at the office of the Alexandria, Minnesota, Chamber of Commerce, the stone with its message has survived its tests pretty well. If your correspondent remembers correctly, it was found with the roots of a full-grown tree entwined about it. It appeared certain that the discoverer was actuated by no sordid motives. Exhaustive linguistic analysis has failed to discredit the language of the document, and in fact few experts in Scandinavian linguistics would be competent to forge a fourteenth-century text of such length.

But the main line of attack has proved to be the weakest. It is now well realized that Norsemen were all up and down the North American coast in the early centuries of this millennium; it would now appear no more than extraordinary that in the fourteenth century Scandinavians should have, for example, entered Hudson Bay, traveled south to Lake Superior, and crossed it to Minnesota, where the stone was found; or have voyaged up the St. Lawrence and the chain of Great Lakes.

Possibly we shall never know for sure. In any case, the Kensington Stone offers one of the most fascinating problems in North American history, and it is good to know that it will be carefully safeguarded.

Southwestern Conference

The Southwestern Archaeological Conference will be held this year on



CENOTAPH OF A HERO

When the Germans captured Crete by air, in May, 1941, JOHN D. S. PENDLEBURY, SIR ARTHUR EVANS' lieutenant at Cnossos, was on duty at Heraklion, as a captain in the British Army. During the fighting near the Canea gate, he was wounded by German parachutists, and later murdered. Where his body was first buried (the Germans later transferred it to the cemetery at St. Constantine), the people of Heraklion erected a wooden cross, appropriately inscribed. At this point, on March 2, 1947, a distinguished gathering of Greek and British officials and scholars paid tribute to his achievements in archaeology and to his heroic death in defense of Crete.

The inscription reads, in Greek, with the name repeated in roman letters,

CAPTAIN
JOHN PENDLEBURY
HE FELL FIGHTING, 21/5/41.

August 24, 25, and 26, at the University of Arizona Archaeological Field School, at Point of Pines, on the San Carlos Indian Reservation, Arizona. "While the discussions will center about Southwestern archaeological problems, efforts will be made to keep the scope broad enough to hold the interest of those not primarily engaged in this field."

For further information, address

Professor EMIL W. HAURY, University of Arizona, Tucson, Arizona.

Morgan Library Exhibition

The Pierpont Morgan Library, 29 East 36th St., New York, will hold an exhibition of Greek Literature—papyri, manuscripts, first editions—open to the public week-days, May 10-July 30, 1948.

BRIEF NOTICES OF RECENT BOOKS

Hermes the Thief. The Evolution of a Myth, by NORMAN O. BROWN. vi, 164 pages, frontispiece. University of Wisconsin Press, (Madison) 1947 \$3.00

This brief monograph is a noble attempt to explain the diverse functions of Hermes as modifications of an original "trickster" god with magical powers. To show that Hermes was originally regarded as such a deity Dr. BROWN relies heavily on semantic interpretation of certain words used with reference to Hermes. His analysis of the Hermes cult involves regarding the ithyphallic image of the god as an apotropaic symbol connected with boundaries rather than as a symbol of fertility.

In Homer and Hesiod the personality and functions of Hermes are modified to meet the needs of the cultural outlook of their respective ages. Thus, in the *Odyssey*, Hermes is the messenger and servant of Zeus, the king; in the *Works and Days* of Hesiod his role is not unlike that of the serpent in the garden of Eden. To meet the change in environmental conditions the author of the *Hymn to Hermes* (which Dr. BROWN dates between 514-511 B.C.) depicts the efforts of Hermes, the idealized representation of the acquisitive philosophy of the industrial and commercial classes, to gain equality with Apollo, the representative of the aristocrats. Dr. BROWN makes use of information brought to light by the recent discoveries in the Athenian Agora to reinforce his interpretation of the *Hymn*.

The study is interesting and provocative; it is simply and clearly written. The reasoning is well-ordered, but flows from premises not generally accepted. Certain aspects of Hermes' functions, as for example his role as conductor of souls to the underworld, or his relations with other deities, are somewhat slighted. Numismatic and other archaeological

evidence is barely mentioned. Actually the book is a study of the *Hymn to Hermes* rather than a study of the evolution of the myth of Hermes.

WILLIAM C. GRUMMEL

New York University

The Glorification of Athens in Greek Drama, by H. R. BUTTS. 247 pages. Privately printed, Vandalia, Missouri 1947 (Iowa Studies in Classical Philosophy, Number XI) \$4.00

In this monograph, a doctoral dissertation submitted at Iowa University, BUTTS has used a fine-tooth comb on the plays and fragments of the three tragedians and Aristophanes. He has pointed out how each playwright emphasized myths, or the elements of myths, that have to do with Athens. He has collected all passages that use complimentary epithets in referring to Athens, that make reference to the advantages of democracy over tyranny, or that are complimentary to Sparta and Thebes. He has analyzed the well-known patriotic choral odes and the treatment by the playwrights of Athena, Athens' patroness, and of Theseus, its legendary hero.

BUTTS concludes that "with conscious effort and without impairing the artistry of their plots the Athenian dramatists made a studied practice of glorifying and gratifying their audiences by using definite techniques of praise . . . this was done with the design of attracting and sustaining the attention of their audiences in order that they and their plays would not be forgotten when the prize was awarded" (page 227).

Except for the implication that, whenever an ancient dramatist said something nice about his home town, it was done consciously and with ulterior motives, no one will dispute the above statement. But no one would

have disputed it before this book was written—it hardly needs proving, much less almost two hundred and fifty pages thereof. L. C.

Ancient Plants and the World They Lived In, by HENRY N. ANDREWS, JR. ix, 279 pages, 166 figures. Comstock Publishing Company, Ithaca 1947 \$4.00

Archaeologists and all other explorers in remote spaces should know about Professor ANDREWS' book. He has compiled a cross-section of our current knowledge of extinct plant forms preserved as fossils, with reference where possible to their modern relatives; and, since he describes the geological strata in which plant fossils have been found, and the circumstances of their discovery and preservation, archaeologists will find many points of tangency with their own field routines. The abundant illustrations are preponderantly from photographs and scale drawings of fossil specimens or their modern counterparts, but more than twenty show the types of terrain or stratification which have yielded specimens, or the operation of removal.

Chapters on ferns, coal, ginkgo, sequoia and other "living fossils," the ice ages, and the history of the science of paleobotany, from Pliny and Da Vinci to Dawson and Knowlton, will be of special interest to some readers.

This is the gayest reference book on the shelf; Professor ANDREWS' serious intentions have not succeeded in subduing his native good spirits.

The author is associate professor at Washington University, St. Louis, and staff paleobotanist at the Missouri Botanical Garden.

J. J.

Ancient Roman Construction in Italy from the Prehistoric Period to Augustus, by MARION ELIZABETH BLAKE. xxii, 421 pages, 57 plates. Carnegie Institution of Washington, Washington 1947 (Carnegie Institution of Washington Publication 570) \$9.00 (paper), \$10.00 (cloth)

The very primitive inhabitants of Italy, as those of many other countries, lived in caves, or huts of grass much like those you may see in the Campagna today. When historical records begin to take form we find them living in wattle-and-daub huts and then in houses of mud brick on an irregular stone socle; fortifications may be built of earth, of mud brick, or of shapeless masses of rock maneuvered into place to form a rough barrier ("cyclopean" masonry).

As tools improve, the use of stone increases. Foundations of public and private buildings and sometimes even entire walls are built of squared stones ("quadrangular" or "ashlar" masonry), while fortification walls progress through the refined cyclopean masonry which we call "polygonal" to ashlar. In Etruria fine stone-work was familiar by the sixth century B.C., possibly even earlier; by the beginning of the third century, good ashlar construction was known throughout Italy.

Not all builders, however, felt they could afford the expense; most house and public building walls were built of irregular, untrimmed stones set in a rude mortar of mud or clay, relying on reinforcement of cut stone or timber framework for rigidity, and on a coating of stucco for protection against weather.

In the search for a stronger mortar for rubble walls, someone happened upon a mixture of pozzolana, a volcanic ash which has the appearance of sand, with lime. It was soon recognized that this had outstanding structural characteristics, and soon entire walls, relatively weatherproof and without reinforcement, were being

made of stones set in the fine new mortar; "Roman" concrete had been born.

This was the most important innovation in the history of European architecture.

At first not all provincial architects fully appreciated the virtues of the new construction. The vaults and domes which were to be the glory of imperial architecture came slowly; for several generations builders retained old structural forms, merely substituting concrete for squared stones. Also, distrusting its resistance to weather, they continued to coat it with stucco, postponing briefly the development of decorative self-surfaces. Then the *caementa*, the broken stones which serve as the aggregate in concrete (and from which by an amusing transfer of meaning we get the English word 'cement'), were trimmed and set in surface patterns which flowered in the "reticulate" or network masonries of the late republic and early empire, and the stucco facing could be omitted. In the meantime, masons were learning by trial and error what the Roman concrete vault could or could not be counted on to do.

In walls where the surface patterns were not important, untrimmed stones and other cheap materials continued to be used. The broken roof tiles and dolia (great storage jars) left over in vast quantities from every municipal fire were expediently disposed of in this manner; both the thin and flanged edges of roof tiles were used for exposed surfaces, and corner fragments were found especially convenient for wall corners and openings. From here to the commercial manufacture of building brick was an obvious and easy step, forever freeing the builder from the problems of materials and opening up the endless avenue of imperial architecture in brick.

To reconstruct the history of Roman construction, from the beginning to the end of the ancient period, as a guide in problems of architectural chronology, Dr. ESTHER BOISE VAN

DEMAN worked in Rome for more than thirty years. In 1925 she laid her notes aside to write her notable *Building of the Roman Aqueducts*, which was published in 1934. She had designated Dr. BLAKE as her literary heir, to complete her proposed work on constructions if she herself should be unable to do so; after her death in 1937, her notes were turned over to Dr. BLAKE.

The "unsettled state of Europe" from 1939 on prevented Dr. BLAKE from personal inspection of recent discoveries and from verification of her own and Dr. VAN DEMAN's notes; rather than postpone the work again, Dr. BLAKE resolved to publish what could be assembled in the libraries of this country, and to draw a line at the reign of Augustus, which ended one school of design and saw a new one start. The present volume is the memorable result of this decision. In ten historical chapters, with comprehensive indices, bibliography, and 225 instructive illustrations on 57 plates, Dr. BLAKE has combined Dr. VAN DEMAN's notes with the results of her own researches on the dug and undug sites of Italy to compile a thorough technical survey of building materials and methods and traditions in Italy down to the beginning of the empire.

As new excavations are begun and completed and published, and as new information is provided by inscriptions, coins, pottery, and other aids to dating, it is inevitable that some of the conclusions presented in this book will be modified. This must not be allowed to obscure the vital fact that the Carnegie Institution in Washington, in the persons of Drs. VAN DEMAN and BLAKE, has performed a gigantic service to archaeology and the history of culture. All future research in the archaeology of republican Italy will necessarily be based on BLAKE, *Ancient Roman Construction*. Is it too much to hope that she will now undertake a second volume, bringing the record down to the epoch of Constantine?

J. J.

NEW BOOKS

Selected at the editorial offices from various sources, including bibliographical publications, publishers' announcements, and books received. Prices have not been confirmed.

ALBENQUE, A. *Inventaire de l'archéologie gallo-romaine du département de l'Aveyron*. 204 pages, ill. Carrère, Paris 1947 390 fr.

ANDERSON, FLORENCE BENNETT. *The Black Sail*. 318 pages. Crown, New York (1948) \$3.00.

Fictional account of Theseus and the Minotaur.

ANTI, C. *Teatri greci arcaici da Minosse a Pericle; 5 ricostruzioni di I. GISMONDI*. 337 pages, ill. *Le Tre Venezie*, Padua 1947 3300 l.

ARCHER, W. G. *The Vertical Man: A Study in Primitive Indian Sculpture*. 122 pages, ill. Allen & Unwin, London 1947 15s.

BAUER, H. A. *Das antike Athen*. Text and 20 color plates. Vienna 1947.

BEAZLEY, J. D. *Etruscan Vase Painting*. 351 pages, 40 plates. Oxford University Press, Oxford 1947 84s.

BENNETT, WENDELL C. *Excavations in the Cuenca region, Ecuador*. 84 pages, ill. Oxford University Press, Oxford 1947. *British Guiana Archaeology to 1945*. 65 pages, ill. Oxford University Press, Oxford 1947 (Yale University Publications in Anthropology, nos. 35 and 36). In 1 vol., 11s. 6d.

BEZA, MARCU. *Heritage of Byzantium*. 108 pages, ill. Society for the Promotion of Christian Knowledge, London 1947 8s. 6d.

BLAKE, MARION ELIZABETH. *Ancient Roman Construction in Italy from the Prehistoric Period to Augustus*. xxii, 421 pages, 57 plates. Carnegie Institution, Washington 1947 \$9.00.

BLISS, ROBERT WOODS. *Indigenous Art of the Americas*. 159 pages, 104 ill., 10 plates in color, map, table. Smithsonian Institution, Washington 1947.

BREASTED, CHARLES. *Pioneer to the Past: The Story of James Henry Breasted, Archaeologist*. 408 pages. Jenkins, London 1947 15s.

CAHN, H. A. *Griechische Münzen archaischer Zeit*. 32 pages, ill. Auerbach, Basel 1947.

CHARBONNEAUX, JEAN. *Sculpture grecque archaïque*. 224 pages, ill. Editions de Cluny, Paris 1947 750 fr.

CHITTENDEN, JACQUELINE, and CHARLES SELTMAN. *Greek Art*. 72 pages. Faber, London 1947 30s.

CLARK, GRAHAME. *Archaeology and Society*. 2nd ed., revised. 222 pages, 29 drawings and diagrams, 24 plates, map. Methuen, London 1947.

CURTIS, L. *Interpretationen von sechs griechischen Bildwerken*. 280 pages, 10 plates. Francke, Bern 1947.

DAVIES, A. MORLEY. *An Introduction to Palaeontology*. 2nd ed. 372 pages. Murby, London 1947 18s.

DEMARGNE, PIERRE. *La Crète dédalique. Études sur les origines d'une renaissance*. 375 pages, 59 figures, 16 plates, 3 maps. Editions de Boccard, Paris 1947 (Bibliothèque des écoles françaises d'Athènes et de Rome) 500 fr.

Excavations at Dura-Europos Conducted by Yale University and the French Academy of Inscriptions and Letters. Final Report IV, edited by M. I. ROSTOVITZ, A. R. BELLINGER, F. E. BROWN, N. P. TOLL, and C. B. WELLES. Part III. *The Lamps*, by P. V. C. BAUR. viii, 84 pages, 38 figures in text. Yale University Press, New Haven 1947.

FARRINGTON, BENJAMIN. *Head and Hand in Ancient Greece*. xii, 121 pages. Watts, London 1947 (Thinkers Library, no. 121) 2s. 6d.

FERNON, EDWIN N., JR. *An Excavation of Hermit's Cave*,

New Mexico. 29 pages. School of American Research, Santa Fe 1946 (Monograph no. 10).

GARDINER, A. H. *Ancient Egyptian Onomastica*. Vol. I, 215 pages. Vol. II, 324 pages. Vol. III, 26 plates. Oxford University Press, Oxford 1947 3 vols. with plates £6 6s., without plates £5 5s.

GATES, R. RUGGLES. *Human Ancestry from a genetical point of view*. xvi, 422 pages, 27 plates, 8 figures in text, 23 tables, map. Harvard University Press, Cambridge 1948 \$7.50.

GORDON, CYRUS H. *Lands of the Cross and Crescent. Aspects of Middle Eastern and Occidental Affairs*. 267 pages. Ventnor Publishers, Inc., Ventnor 1948 \$3.75.

HEURGON, J. *Recherches sur l'histoire, la religion et la civilisation de Capoue préromaine*. Editions de Boccard, Paris 1947 (Bibliothèque des écoles françaises d'Athènes et de Rome, no. 154).

HOMO, LEON. *Le siècle d'or de l'empire romain*. Fayard, Paris 1947 350 fr.

JENNESS, D. *Report of the Canadian Arctic Expedition, 1913-1918*, vol. 16. *Material Culture of the Copper Eskimo*, Southern Party, 1913-1916. 148 pages, 189 figures, frontispiece. Edmond Cloutier, Ottawa 1946.

KAHLE, PAUL E. *The Cairo Geniza*. 240 pages. Oxford University Press, Oxford 1947 12s. 6d.

LUGLI, G. *Monumenti minori del Foro Romano*. 194 pages, ill. Bardi, Rome 1947 750 l.

MARTIN-CLARKE, D. ELIZABETH. *Culture in Early Anglo-Saxon England*. 100 pages, 28 plates. Johns Hopkins Press, Baltimore 1947 \$2.25.

MOOKERJI, RADHA KUMUD. *Ancient Indian Education*. 655 pages. Macmillan, London 1947 42s.

PARIBENI, R. *La Macedonia sino ad Alessandro Magno*. vii, 113 pages. *Vita e Pensiero*, Milan 1947 (Pubblicazione Università Cattolica Sacro Cuore) 330 l.

PRITCHETT, W. KENDRICK, and O. NEUGEBAUER. *The Calendars of Athens*. xi, 115 pages. Published by the Harvard University Press for the American School of Classical Studies at Athens, Cambridge 1947 \$5.00.

RAPHAEL, MAX. *Prehistoric Pottery and Civilization in Egypt*. Pantheon, New York 1947 \$7.50.

RICHMOND, IAN. *Roman Britain*. 47 pages. Collins, London 1947 5s.

RIVET, P. and H. ARSANDAUX. *La métallurgie en Amérique précolombienne*. 254 pages, 8 figures, tables. Musée de l'homme, Paris 1946 (Travaux et Mémoires de l'Institut d'Ethnologie, no. 39).

SATTERTHWAITE, LINTON, JR. *Concepts and Structures of Maya Calendrical Arithmetics*. 168 pages. Philadelphia 1947 (Joint Publications of the Museum of the University of Pennsylvania and the Philadelphia Anthropological Society, no. 3).

SCHEFOLD, K. *Die Bildnisse der antiken Dichter, Redner und Denker*. 228 pages, ill. Schwabe, Basel 1947.

SHETELIG, HAARON. *Préhistoire de la Norvège*. 280 pages, 10 plates. Harvard University Press, Cambridge 1946.

STEWART, CECIL. *Byzantine Legacy*. 202 pages, ill. Allen & Unwin, London 1947 25s.

STILL, ALFRED. *Communication through the Ages*. 210 pages. Murray Hill Books, New York and Toronto 1946.

STURTEVANT, E. H. *An Introduction to Linguistic Science*. 173 pages, 8 figures. Yale University Press, New Haven 1947.

SUKENIK, E. L. *The Earliest Records of Christianity*. Archaeological Institute of America, Cambridge 1948 (Special abstract from the *American Journal of Archaeology*, vol. 51, no. 4) \$1.00.

WALTER, GERARD. *La destruction de Carthage*. 512 pages. Samogy, Paris 1947 480 fr.

WIGRAM, W. A. *Hellenic Travel*. 266 pages, ill. Faber, London 1947 15s.



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24 May, 48

